Marco Pescetelli

The Art of Not Forgetting:

Towards a Practical Hermeneutics of Film Restoration

Ph.D. Thesis

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I, Marco Pescetelli, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Marco Pescetelli (signed)

Abstract

The main aim of the thesis is to develop a definition of film restoration, both in its intrinsic properties and in relation to the restoration of traditional, non-reproducible works of art. Concentrating on films made between 1914 and 1931, it takes as its theoretical starting point Walter Benjamin's 1936 essay *The Work of Art in the Age of its Technological Reproducibility* and moves towards a framework incorporating Hans-Georg Gadamer's ontological hermeneutics and Umberto Eco's reflections on forgery. It includes four case studies of restoration of Italian colour films as well as a systematic comparison between approaches to the restoration of works of art (Cesare Brandi, Michele Cordaro and others) and those to the restoration of films (Mark-Paul Meyer, João de Oliveira, GAMMA group and others). Different types of source are used to address practical issues in film restoration: technical documents (acquired in NFTA-London and CN-Rome), published, visual and oral sources. The latter consist of interviews with the main restorers involved in the case study projects (de Oliveira, Mario Musumeci, Johan Prijs) and other important scholars and restorers (Paolo Cherchi Usai, Martin Koerber, Nicola Mazzanti, Meyer). The thesis is divided into four chapters. The first introduces theoretical reflections on restoration applied to films and clarifies a number of terminological issues as well as providing a brief historical overview of the causes of dispersal and destruction of films. The second presents the four case studies and concentrates on specific aspects of film restoration: identification, colour, editorial restoration. The third addresses two key issues in restoration practices – patina and lacuna – and compares the differences in treatment between traditional arts (painting, sculpture, architecture) and cinema. The last, theoretical chapter defines a restored film from a semiotic viewpoint and offers a definition of film restoration as a hermeneutic discipline.

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Acknowledgements

I can still remember vividly an afternoon I spent at the Cineteca Nazionale in the autumn of 1992, in which, in search of material for a documentary film, I became acutely aware of how perishable and impermanent films can be. Ever since, some years later, I first began to think about a PhD project that would enable me to pursue my keen interest in film studies and in particular in the preservation of a cultural heritage that I felt was at risk of being lost, I have had the good fortune to receive support and guidance from a number of people to whom I wish to extend my gratitude.

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Introduction

Was du ererbt von deinen Vätern hast,
erwirb es, um es zu besitzen.

What from your father you've inherited,
You must earn again, to own it straight.

Johann Wolfgang von Goethe[1]

In the last few decades, scholars and professionals alike have begun to devote increasing attention to the problems of film restoration. The 1978 annual meeting of the Fédération Internationale des Archives du Film (FIAF), held in Brighton, at which hundreds of early silent films were screened, marked a turning point in research in this field and gave fresh impetus to a new reading of cinema history. The mere fact of showing such a significant number of silent films put cinema historians in a position to view, appreciate and enjoy cultural objects that had previously been jealously guarded in archives, and made it apparent that better solutions needed to be found to allow future generations to enjoy the same experience.[2] Martin Scorsese's was the most influential public voice to raise the alarm at the 37th Venice Film Festival in 1980 about the fading of colour in more recent films. One month later, the 'Recommendation for the Safeguarding and Preservation of Moving Images' was approved by UNESCO (27 October 1980), contributing to establish films as an integral part of a country's cultural heritage, and

[1] *Faust* I, 682-3, translated by Anthony S. Kline.
[2] Some film historians make a distinction between silent and early films, reserving the term 'silent' for films produced between 1905 and 1929. See for example Roberta Pearson, 'Early Cinema', in *The Oxford History of World Cinema*, ed. by Geoffrey Nowell-Smith (Oxford: Oxford University Press, 1996), pp. 13-23. However, most of the scholarly literature applies the term 'silent' in a broader sense to encompass all films made between 1895 and 1929. It is in this latter sense that I use 'silent' throughout this thesis.

raising consciousness about a particular trait of cinema, the defining art of the twentieth century: its ephemerality.[3]

Contemporary audiences have often regarded silent films as 'primitive', a developing form of expression, inevitably set to evolve deterministically into future, more attractive films, coloured naturally, with increasingly improving sound and spectacular special effects. However, in the last few years scholars have stressed the importance of taking a fresh look at silent films in order to rewrite a more authoritative film history of that 'era':[4] it was in the 'silent era' that cinema began to establish a reputation for itself as a new form of art, and the products of that era must be considered as artistic objects in their own right as well as cultural testimonies of a past time. It is a particularly regrettable reality that, for many reasons, which I investigate in the first chapter, most of the films produced in this period have been lost. Because of their intrinsically fragile nature, films (not only silent ones) undergo constant physical and chemical decay, thus creating the need to preserve what remains, and to make it viewable, in an increasingly urgent effort to stop, or at least slow down, the damage caused by nitrate decomposition.[5]

After a first phase in which professionals were largely concerned with preservation to slow down the physical/chemical decay of films – well represented by the slogan 'Nitrate Won't Wait'[6] – more aesthetic and historical considerations have emerged in film archives and these have been mirrored in niche film festivals, such as Cinema Ritrovato or Giornate del Cinema Muto (to mention only the Italian ones) and

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[3] Scorsese himself gives a personal account of this intervention in Paolo Cherchi Usai, *The Death of Cinema: History, Cultural Memory and the Digital Dark Age* (London: BFI, 2001), p. vii. A law aimed at conserving films in Italy was approved only in 1999 (Decreto Legislativo of 29 October 1999, no. 490).

[4] Ian Christie, 'Mystery Men: Two Challenges to Film History', *Film Studies* (1999), 78-80. On this issue see also Martin Koerber, 'Where Do We Go from Here? Afterthought on the 1997 Retrospective on G.W. Pabst in Berlin', *Journal of Film Preservation* (1998), 23-7.

[5] Nitrate was the main component of film stock base produced until 1951, after which it was substituted by a safer carrier.

[6] On the history of this slogan see Anthony Slide, *Nitrate Won't Wait: A History of Film Preservation in the United States* (Jefferson, NC: McFarland, 2000; repr. 1992) and by the same author, *Silent Topics: Essays on Undocumented Areas of Silent Film* (Lanham: Scarecrow Press, 2005).

in conferences for specialists, such as the annual FIAF congress.[7] In the passage from what Enno Patalas has called 'wild restoration', namely 'hasty decision-making and improvised restoration activity',[8] to a less amateurish approach to film preservation/restoration, curators, restorers, and scholars have begun to discuss new issues linked to the nature of film restoration, together with ethical and philosophical matters involved in this developing and ever evolving discipline.

Nicola Mazzanti has proposed that the tenets deriving from Cesare Brandi's theory of restoration, developed in the years following the Second World War primarily for the restoration of paintings, may be generally accepted among film restorers, adding, however, that restorers are left 'with the problem of finding the terms of application to film restoration […] which undoubtedly deserves consideration.'[9] The context not only of restoration, but also of the audience's reception and the ways in which films are enjoyed, has acquired a growing importance in the theoretical debate, considering the entertainment industry's rising interest in the market value of old films. Enno Patalas has stressed that film restorers/conservators/curators 'are saving not simply physical material, but cinema's imaginary […] which includes the film (as an object, as a part of a world of such objects), the conditions and context of its presentation, and the spectators.' On the same path, Peter von Bagh emphasizes the importance of cinephilia as a breeding ground for film preservation and film culture, as well as the usefulness of niche festivals, in which large audiences are put into direct contact with silent films and encouraged to conceive them as a kind of cinema with its own special characteristics

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[7] See <http://www.cinetecadibologna.it/cinemaritrovato2010> [accessed 29 August 2010]; <http://www.cinetecadelfriuli.org/gcm/giornate/questa_edizione.html> [accessed 30 August 2010]; <http://www.fiafnet.org/uk/congresses/> [accessed 30 August 2010].

[8] Enno Patalas, 'On "Wild" Film Restoration, or Running a Minor Cinematheque', *Journal of Film Preservation*, 56 (1998), 28-38 (p. 28).

[9] Nicola Mazzanti, 'Footnotes: For a glossary of film restoration', trans. by Angela Montgomery, in *Restoration, Preservation and Destruction of Films*, ed. by Luisa Comencini and Matteo Pavesi (Milan: Il Castoro, 2001), pp. 14-31 (p. 28).

and conventions and its own ways of viewing. Silent cinema can thus continue actively to shape the public's cultural imaginary. [10]

In most cases, theoretical reflections on the theory of film restoration have not taken into account a broader philosophical framework, as the theory of restoration has done in other fields (paintings, sculptures, and architectural monuments). It is a fact that – to put it in Mazzanti's words – 'a theory of film restoration does not yet exist.'[11] At a time when moving image technology is evolving at an increasingly rapid pace, people working in film restoration need to base their decisions on a clear theoretical framework against which their work can be assessed, and which may help to outline the ethical boundaries of their actions.

My research attempts to take a step in this direction by presenting a set of theoretical reflections that apply to the particular case of feature silent films. I have chosen to address this topic firstly because I have become progressively aware of the fact that they are in most cases to be considered unique cultural objects, rather than simply copies made from a matrix. Also, since most silent films have been lost, they are most urgently in need of preservation. Finally, taking care of silent films so that they may be watched and enjoyed in the future is an indispensable step to ensure that the remote past of cinema history may be appreciated by scholars and the broader public alike. In order to carry out my research I visited a number of film laboratories – Augustus Color, Studio Cine, PresTech, Cinema Ritrovato – to observe the everyday work of professionals involved in film restoration projects and to work alongside them. I also consulted a number of film archives and museums – Cineteca Nazionale in Rome, National Film and Television Archive in Berkhamsted, Cineteca di Bologna, Museo del Cinema di Torino – and observed a number of restoration projects at first hand. The initial stage of my research focused principally on technical aspects, in particular the

[10] Patalas, 'On "Wild" Film Restoration, p. 27; Peter von Bagh, 'Miracolo a Bologna' *Journal of Film Preservation* 56 (1998), 39-44.
[11] Mazzanti, p. 23.

question of how to reproduce colours that were produced a century ago using techniques that no longer exist. The work I observed in the restoration laboratories prompted questions that needed more theoretical answers, and this led me to enquire further into the methodology of film restoration in comparison with other works of art restoration, such as the different approaches to the treatment of 'patina' and 'lacuna' in the restoration of paintings, sculptures and architectural monuments. In addition, access to the film restoration laboratories gave me the chance to document the works of film restoration I observed, thus – hopefully – 'also [making] the restoration itself a history worth telling.'[12]

The main purpose of this thesis is to move towards a definition of film restoration, especially in relation to the specific problems arising with silent films. Silent films are different in many respects from films made after the 'sound revolution'. The increasing standardization of film production after the advent of dupe negative film stock and the abandonment of earlier techniques, such as the application of colours by hand, stencil, tinting or toning, led to a kind of product that evolved into an industrial artefact, whereas silent films remain closer to a unique product. This ontological ambiguity of the silent film, halfway between an industrial and a handmade object, poses specific and complex issues in restoration choices, which I believe are best assessed using a philosophically-grounded theoretical framework.

Taking into consideration the activity of the main Italian public institutions devoted to film preservation, namely the Cineteca Nazionale, Museo Nazionale del Cinema di Torino, Cineteca di Bologna, Cineteca del Friuli, I focused my attention on four case studies of Italian films produced between 1914 and 1931. I was personally involved in these four projects from the start, when I was a graduate student at Centro Sperimentale di Cinematografia in Rome, where I was awarded funding in 1994 for a

[12] Casper Tybjerg, 'The Raw Material of Film History', in *Preserve Then Show*, ed. by Dan Nissen and others (Copenhagen: Danish Film Institute, 1998), pp. 14-21.

film project documenting the preservation work at the Cineteca Nazionale. My interest in film preservation and the challenge of technically reproducing the original characteristics of silent films through modern means of production grew over the years. The involvement of João Socrates de Oliveira in a number of film restoration projects at the Cineteca Nazionale led me to London, where I worked in the PresTech Film Laboratories, and to take my research in a more theoretical direction.

I have chosen to work on these case studies not only because they gave me the chance to observe, document, and in some cases directly participate in the work of restoration, but also because they presented a wide range of practical problems with which restorers need to deal when working on silent coloured films: the identification of an 'orphan' film (i.e. one where the attribution to a particular production company and director is uncertain), the comparison of different versions, duplication procedures, the decisions involved in restoring sensitive features such as colours and a musical score and in screening the film itself to different audiences, with different aims.[13] The fact that technology has been developing so fast in recent years has complicated matters further, since the film industry has increasingly embraced digital means of production and reproduction. After the first enthusiastic promises of eternal duration and perfect duplication, digital technology has added new challenging questions to film restorers: the practical challenges pose questions that must be tackled in a theoretical perspective, but they also involve philosophical questions: the concept of 'originality' and 'authenticity' is one of the most hotly debated topics in the current state of the discussion.[14]

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[13] On orphan films see <http://www.sc.edu/filmsymposium/orphanfilm.html> [accessed: 2 September 2010].

[14] Cf. Lindsay Kistler Mattock, 'From Film Restoration to Digital Emulation', *Journal of Information Ethics*, 19 (2010), 74-85; Nathan Carroll, 'Unwrapping Archives: DVD Restoration Demonstrations and the Marketing of Authenticity', *The Velvet Light Trap* (2005), 18-31; Julia Wallmüller, 'Criteria for the Use of Digital Technology in Moving Image Restoration', *The Moving Image*, 7 (2007), 78-91; *Celluloid Goes Digital: Historical-Critical Editions of Films in DVD and the Internet*, ed. by Martin Loiperdinger (Trier: WVT, 2003); Lev Manovich, 'The Paradoxes of Digital Photography', 1995, Available at: <http://www.manovich.net/TEXT/digital_photo.html> [accessed 9 August 2010]. See also Martin Emele,

It may seem odd that in an age of transition to digital production, and digitized archives, I have concentrated my discussion on the restoration/conservation of film on film. In fact, during the period of my research film archives have increasingly been leaning towards the use of digital technology, well documented in an article by Arianna Turci.[15] However, the success of digital technology has not done away with a number of problems. Firstly, the speed of this change is no warranty of durability: this is why Paolo Cherchi Usai claims that digital is a 'questionable technology and not appropriate to a long-term conservation of audio-visual artefacts' because of the risk of rapid technical obsolescence.[16] Secondly, there is lack of a standard: in the restoration field, for instance, at least two systems are business rivals, that is Diamant in Europe, Revival in USA.[17] Thirdly, a gap has emerged between digital film laboratory technicians and film archivists, who have often been excluded from the micro decision-making in the restoration process.[18] Finally, the ethical issues have not yet been adequately addressed.[19] The focus of the debate remains on the technical aspects of making this technology less costly, less time-consuming, and more reliable in avoiding so-called 'digital artefacts' (i.e. undesired alterations in data created during the restoration process), in an attempt to achieve semi-automatic systems of restoration.[20]

Film archivists and 'restorers are reluctant to predict that digital restoration will replace traditional restoration', but they are however aware that raw film stock

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'The Assault of Computer-generated Worlds on the Rest of Time', in *Cinema Futures: Cain, Abel or Cable?* ed. by Thomas Elsaesser and Kay Hoffmann (Amsterdam: Amsterdam University Press, 1998).

[15] Arianna Turci, 'The Use of Digital Restoration within European Film Archives', *The Moving Image*, 6 (2006), 111-26.

[16] Paolo Cherchi Usai, 'The Demise of Digital (Print #1)', *Film Quarterly*, 59 (2006), 3; Cherchi Usai, 'Digital Film Restoration at George Eastman House', *Image*, 42 (2004), 18-9 (p. 19).

[17] Ibid., p. 19.

[18] Fumiko Tsuneishi, 'Some Pioneering Cases of Digital Restoration in Japan', *Journal of Film Preservation*, 69 (2005), 45-52 (p. 52).

[19] Turci, p. 111.

[20] See Rudolf Gschwind, 'Restoration of Old Motion Picture Films by Digital Image Processing', in *Preserve Then Show*, ed. by Nissen, and others, pp. 168-78; László Czúni and others, 'A Digital Motion Picture Restoration System for Film Archives', *SMPTE Motion Imaging Journal*, 113 (2004), 170-6; Anil Kokaram and others, 'Digital restoration Systems: Copying with Reality', *SMPTE Motion Imaging Journal*, 112 (2003), 225-31.

production will probably cease in the near future.[21] It seems unlikely that film archives or film laboratories will produce film stock on their own, although João de Oliveira did suggest this possibility to me in a private conversation in July 2004. It seems likely that films will become increasingly unique, untouchable and inaccessible cultural objects, to be kept under lock and key. If an effort is not made to ensure the survival of the know-how and the cultural background of photochemical technicians in laboratories, the cultural legacy of silent films in all their materiality will be forever lost, and only ghost-like reproductions of them will remain.

As the core of my research has shifted from the practical to the methodological and then to the theoretical aspects of film restoration, including questions of cultural context and audience reception, I have come to share to some extent Julia Wallmüller's 'conservative' view of film restoration as an activity ultimately aimed at producing a film in its original form, i.e. as film stock to be projected. I have found the issue of colour reproduction on modern film stocks particularly interesting, given that the technology used to produce the original colours applied on silent films was discarded decades ago and is no longer available. A similar problem arose in the restoration of the sound version of *Cabiria* (see 2.4) where music and sounds had been recorded on shellac discs and played through Bixiophone equipment.[22]

The thesis is divided into four chapters. The first starts with two historical sections (1.1 and 1.2) giving an overview of the causes of the disappearance of silent films over the years and then continues with two others (1.3 and 1.4) that set out the necessary theoretical and terminological premises for the research through the definition of films as objects to be restored. I devote particular attention to the distinction between the terms 'preservation', 'restoration', 'reconstruction' and 'conservation' in the field of film restoration, compared with their shades of meaning in other fields of restoration.

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[21] Turci, p. 122.

[22] All cross-references to sections of chapters in this thesis will henceforth be in this form; 2.4 is the fourth section of Chapter 2. Some chapters contain further subsections, in the format 2.4.1, etc.

In the second chapter I analyze restoration procedures through four case studies, each of which highlights (among other things) a different question in the practice and methodology of film restoration – respectively identification, compensation for narrative or figurative lacunae, reconstruction of the original score, and presentation – in an attempt to answer the initial questions of defining the nature of film restoration and distinguishing museological from archival purposes. These works of restoration were not necessarily all on the same level with respect to historical importance, but – as already noted by Anthony Slide – 'the smaller, less "glamorous" restoration efforts are often just as time consuming and can sometimes be more complex.'[23] The first two cases in fact gave the opportunity to the Cineteca Nazionale professionals to experiment in reproducing original techniques of colouring films. Together, the analyses of these four cases provide an inside view of different methods of intervention on silent films in Italy over the last decade and a half.

In the third chapter I compare the ethics and practices of conservation/restoration of traditional forms of art (painting, sculptures, architectural monuments) in dealing with patina and lacunae, in order to get better theoretical bearings on film restoration and thus to work towards a clearer definition of what is really distinctive about it. The fourth chapter is an attempt to combine Brandi's theory with Gadamer's hermeneutics and apply them both to film restoration, after defining restored films from a semiotic point of view.

The methodology of the research has involved a number of strands. In the first place there was my core fieldwork, consisting of the close empirical analysis and reconstruction of different film restoration projects in Italian archives, as well as video interviews with scholars, restorers and curators (Alberto Barbera, Paolo Cherchi Usai, João de Oliveira, Martin Koerber, Nicola Mazzanti, Mark-Paul Meyer, Mario

[23] Slide, p. 213.

Musumeci, Johan Prijs, Vittorio Martinelli). I have not included the full transcriptions of the interviews in the thesis because of space constraints, but I have drawn on them and quoted from them at various points and they are available for perusal on request.[24] Secondly, I carried out a substantial theoretical investigation, using published sources, in which I adopted a cross-disciplinary approach, merging perspectives from film history, textual criticism, semiotics, ethics, art restoration, aesthetics and hermeneutics, aiming at a synthesis of theoretical reflections in the field of film restoration.

The literature on film restoration is vast, but it is mostly technically oriented. Among the mainstays there is the relatively recent book promoted by the Gamma Group (composed of film archive professionals and aimed at developing and promoting preservation/restoration technologies), *Restoration of Motion Picture Film*, edited by Paul Read and Mark-Paul Meyer (2000). As a manual for restorers it is excellent, but only three pages (pp. 75-8) out of more than three hundred are devoted to the ethical problems of film restoration. My own research does not aim to duplicate these technical publications, nor does it attempt to propose practical solutions. Rather, it aims to provide a solid basis for the *theory* of film restoration, underpinned both by practical case studies and systematic comparisons with restoration in other fields of art, with the twin objectives of broadening the boundaries of the current reflection on film restoration and bridging the gap between it and traditional forms of art restoration.

I am indebted in my research to many different works on diverse aspects of silent film restoration published in recent years. One of the most hotly debated issues in the field has been how to reproduce colours in the most 'faithful' way. Even though a larger audience may be not aware of the fact that silent films were coloured, for scholars today this is an accepted fact, even though the problem of the restoration of this particular feature is still difficult to solve. A seminal point of reference here is *All the*

[24] I hope to be able to publish these additional materials at a later stage.

Colours of the World: Colours in Early Mass Media (1900-1930), a project promoted by Gamma Group in 1998. Interestingly, the main focus is on the search for a technique that might provide the best results in terms of accuracy in reproducing the colours of silent films. Many of the same scholars and film archivists who contributed to this book had already produced another text on the same subject, though one more markedly oriented towards discussing the semantic use of colours in silent films: '*Disorderly Order': Colours in Silent Film: The 1995 Amsterdam Workshop*, edited by Daan Hertogs and Nico de Klerk (Amsterdam: Nederlands Filmmuseum, 1995).

A work that attempts to merge both the technical and theoretical aspects of film restoration is the seminal book by Paolo Cherchi Usai, *Silent Cinema: An Introduction* (London: British Film Institute, 2000), a revised and expanded edition of *Burning Passions* (1994) of which the original Italian edition, *Una passione infiammabile* (Torino: UTET), was published in 1991. Cherchi Usai approaches many issues related to film preservation, substantiating his train of thought through ten rules of intellectual work, and emphasizing the need for an ethical code of behaviour to refer to during the restoration of films. In the last part, like most of the scholars involved in this field, he deals with 'film spectatorship' – in his words – 'as an art form'. He thus focuses on the context as a crucial part of cinematic experience, but his description of the technical/cultural gap between a modern audience and the past is not accompanied by a discussion of the different solutions devised by film restorers to show their work (namely, a 'restored' version) that solidly grounds the empirical proposals in a philosophical framework to move towards a theoretical plane.

A good starting point to examine different aspects of terminology is Mazzanti's article 'Footnotes: For a Glossary of Film Restoration' in *Restauro, conservazione e distruzione dei film* (edited by Luisa Comencini and Matteo Pavesi, 2001), more

recently (2006) republished in Simone Venturini's edited book on film restoration.[25] Julia Wallmüller provides some answers to the questions raised by Mazzanti in her article 'Criteria for the Use of Digital Technology in Moving Image Restoration', in a section on terminology. The question about the use of terms such as restoration, preservation and conservation is complicated by the fact that the same terms are used in different fields with slightly different meanings linked to restoration (see 1.4). For an historical and etymological perspective on the use of terms in Europe, as well as the architectural theories beyond them, Stephan Tschudi-Madsen's work, *Restoration and Anti-Restoration: A Study in English Restoration Philosophy*, constituted my first reference point to retrace the roots of the disputes between 'conservationists' and 'restorationists' (broadly speaking, one may refer to Ruskin, Morris and the Anti-Scrape Society versus Viollet-le-Duc, the British versus the French school), still alive after almost two centuries. I discuss their respective arguments in the third chapter.

Simone Venturini has collected interesting essays by the most influential curators who have discussed the developing discipline of film restoration. The attempt to organize this various material lacks, however, a clear philosophical frame, which would have helped to outline a more coherent whole, as promised in the title: *Il restauro cinematografico: principi, teorie, metodi*. Another interesting source in which the technical aspects of preservation work is interwoven with theorical reflections is *Preserve, Then Show,* a collection of papers given at the Danish Film Institute (2001). Here the focus on the link between preserving and showing mirrors Henri Langlois' position: showing films is important to preserve cinema history, and the 'content' of films must be passed down to future generations, not simply guarded in inaccessible archives. Actually, the outlook of modern film archives has shifted or even reversed this

[25] Simone Venturini, 'Il restauro cinematografico, storia moderna', in *Il restauro cinematografico: principi, teorie, metodi*, ed. by Simone Venturini (Pasian di Prato: Campanotto, 2006), pp. 89-97.

idea into a more cautious approach, which stresses the necessity of preserving before showing.

From an historical point of view, an endless source of fascinating information is provided by the hefty anthology (more than 600 hundred pages) edited in 2001 by Roger Smither, who collected essays and testimonies from his colleagues, members of FIAF, to celebrate the 'nitrate era'. The interest of this work – mostly focused on the 'material that carried film for the first half-century of cinema' – lies in the fact that it represents the voices of many people involved in film preservation, and includes a considerable amount of interesting pictures supplied by film archives. For historical data on the dispersal of silent films I have drawn useful information from the work of Anthony Slide (*Nitrate Won't Wait*, 1992) and David Pierce (*The Legion of the Condemned*, 1997) and for a more general outline of the history of film preservation I have referred in particular to Penelope Houston's *Keepers of the Frame: The Film Archives*. I have kept as a constant point of reference on the Italian history of silent cinema the work of Gian Piero Brunetta (*Storia del cinema italiano: cinema muto, 1895-1929*), Vittorio Martinelli (*Il cinema muto italiano: I film del dopoguerra/1920*; and *Il cinema muto italiano: 1924/31*) and Riccardo Redi (*Cinema muto italiano: 1900-1930*); on the wider history of cinema I have consulted *The Oxford History of World Cinema* edited by Geoffrey Nowell-Smith, *The Silent Cinema Reader* edited by Lee Grieveson and Peter Krämer, which focuses on the contexts in which films were 'made exhibited and understood' (p. 5), and *Film History: Theory and Practice*, edited by Robert C. Allen and Douglas Gomery, which introduces the historiographical issue of what it means to 'do' film history. For a more technical point of view I have also taken into account Barry Salt's work, exploring the connections between history of technology and film style, as well as David Bordwell and Kristin Thompson's general

film history, which is particularly interesting for its stress on the development of cinema industry and the production system.[26]

Articles in specialized journals have been another important source of information, such as, for instance, the FIAF's *Journal of Film Preservation* and the AMIA's (Association for Moving Image Archivists) *The Moving Image*, as well as *Film History*. Some interesting articles are to be found in journals not specifically dedicated to film preservation/restoration, like *The Velvet Light Trap*, on the ethical problems with which restorers deal in an era of fast-paced technological change.

In an attempt to compare film with art restoration I have explored the literature in this field, which is vast. As well as using the pivotal work by Cesare Brandi, *Theory of Restoration*, I based my initial comparisons between the theory and methodology of restoration of so-called 'traditional' or 'major' arts (painting, sculpture, architecture) and film restoration on the work of Umberto Baldini and Ornella Casazza, as well as Albert and Paul Philippot (paintings), Alessandro Conti and Luciana Martini (sculptures).[27] Both Jukka Jokhileito and Giovanni Carbonara have made significant contributions towards piecing together the history of architectural restoration, through accounts of the changing methodologies and theories over the centuries. In addition, Paolo Marconi's works attracted my attention for his different and 'heretical' way of thinking about architectural restoration, which is closer to the idea of a reconstruction of the object 'as it was', resuscitating old techniques of building and decorating.[28] A wide-ranging anthology of essays is *The Historical and Philosophical Issues in the*

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[26] Barry Salt, *Film Style and Technology: History and Analysis* (London: Starword, 1983); David Bordwell and Kristin Thompson, *Film History: An Introduction* (New York: McGraw-Hill, 1994).

[27] Umberto Baldini, *Teoria del restauro nell'unità di metodologia*, 2 vols (Florence: Nardini, 1978); Ornella Casazza, *Il restauro pittorico nell'unità di metodologia* (Florence: Nardini, 2007); Albert Philippot and Paul Philippot, 'The Problem of the Integration of Lacunae in the Restoration of Paintings', trans. by Garret White, in *Historical and Philosophical Issues in the Conservation of Cultural Heritage*, ed. by Nicholas Stanley Price, M. Kirby Talley Jr, Alessandra Melucco Vaccaro (Los Angeles: The Getty Conservation Institute, 1996); Alessandro Conti, *Storia del restauro e della conservazione delle opere d'arte* (Milan: Electa, 2002); Luciana Martini, *Storia e teoria del restauro delle opere d'arte* (Ghezzano: Felici, 2008).

[28] Paolo Marconi, *Materia e significato: la questione del restauro architettonico* (Rome and Bari: Laterza, 2003); Paolo Marconi, *Il recupero della bellezza* (Milan: Skira, 2005).

Conservation of Cultural Heritage, edited by Nicholas Stanley Price, M. Kirby Talley Jr. and Alessandra Melucco Vaccaro, while Geoffrey Hedley's *Measured Opinions* is still a valid contribution on the controversial issue of cleaning paintings, as is the target audience-oriented position expressed by Andrea Rothe in *Personal Viewpoints: Thoughts about Painting Conservation*. These studies present the development of the 'sacred tenets' in the emerging modern theory of conservation (i.e. respect for authenticity, reversibility and recognizability of the interventions) and have led me to deepen my research on restorers' decision-making processes when dealing with complex issues such as patina and lacuna.

Two challenging books are particularly useful to understand better the direction of the theoretical thought on conservation and historicity: Salvador Muños Viñas's *Contemporary Theory of Conservation* and Philip Rosen's *Change Mummified: Cinema, Historicity, Theory*. Both adopt a critical stance on traditional conservation theory and pay attention not only to the object to be conserved, but also, and above all, to the context. Muños Viñas stresses the principle of 'sustainability', similar to the concept of reversibility, but a 'more complete notion as it more explicitly acknowledges the need to take future uses and users into account.'[29] Parallel to these works, but from a more technical perspective, is Chris Caple's *Conservation Skills: Judgment, Method and Decision Making*, which follows the evolution of ethical reflections on conservation, highlighting the importance of the public and, again, the context in which restorers work.

My research on the methodology of film restoration, especially when related to the filling of narrative lacunae, has been furthered through reference to work on textual criticism, which has established solid principles for dealing with the problem of the transmission of literary texts. A broad range of positions have provided food for

[29] Salvador Muñoz Viñas, *Contemporary Theory of Conservation* (Oxford: Butterworth-Heinemann, 2005), p. 196.

thought, from Karl Lachmann's method to Joseph Bédier's reflections, positivistically aimed at reconstructing a faithful or 'best' text, to the French (Paul Zumthor and Bernard Cerquiglini) and Italian philological schools (Giorgio Pasquali, Michele Barbi and Gianfranco Contini), which were more oriented to the cultural and linguistic context in which literary works were conceived. Such a philological parallel has helped my research to embrace a change of perspective in considering film restoration not only as a technical operation aimed at producing 'the best' version, the *Ur*-copy, but also as a process which must take into account the audience's cultural horizon.

As a theoretical starting point, the seminal essay by Walter Benjamin – *The Work of Art in the Age of its Technological Reproducibility* – remains a landmark for any work concerned with cinema as an essentially reproducible art.[30] Furthermore, Umberto Eco's work *The Limits of Interpretation*, on Charles Sanders Pierce's iconism, has provided a valid perspective to put forward a provocative hypothetical definition of the restored film from a semiotic point of view. I have been inspired to take this direction by Michele Canosa's essay 'Immagini di materia: questioni di restauro cinematografico', in which his reflection on film restoration is fruitfully connected to semiotics.[31] Finally, Massimo Carboni's short but extremely interesting essay 'Il restauro come ermeneutica practica: Brandi e Gadamer' (2006) – from which the title of this thesis takes its cue – establishes crucial connections between Hans-Georg Gadamer's *Truth and Method* and Cesare Brandi's *Theory of Restoration* that have pointed me towards a philosophical framework that seems to me necessary to my exploration of film restoration as an hermeneutic, that is, an interpretative discipline. It

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[30] See Walter Benjamin, *The Work of Art in the Age of Its Technological Reproducibility, and Other Writings on Media*, ed. Michael W. Jennings, Brigid Doherty and Thomas Y. Levin (Cambridge, MA: Harvard University Press, 2008). The translation in this recent edition of the essay and its title, 'Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit', is more accurate than in the first widely-available English version, in Walter Benjamin, *Illuminations*, ed. Hannah Arendt (New York: Schocken, 1969). The essay, written in Paris in 1935, was first published in French in 1936 as 'L'œuvre d'art à l'époque de sa reproductibilité technique'.

[31] Michele Canosa, 'Immagine e materia: questioni di restauro cinematografico', *Cinema&Cinema*, 19 (1992), 21-47.

is a discipline, however, with a strong practical vocation, as its challenge is to solve general problems in the most diverse situations, case by case.

1 From destruction to reconstruction: historical and theoretical premises

1.1 Fading films: the dispersal and destruction of films

> Experience teaches us that loss of memory is as inevitable as anxiety for the future. In the hope of avoiding both, the maker of moving images fabricates memories or visions of what is to come in the cherished belief that they will exist forever in an eternal present of the spectator's will.[32]
>
> Paolo Cherchi Usai

If one asked what remains of the cinema 115 years after the first public projection by the Lumière Brothers, the answer would be alarming: in little more than a century, of all films produced during the silent era (1895-1930) it has been reported that approximately 80% have been lost.[33] Of all films produced during the nitrate sound era (1930-55) it seems that only about 50% have survived in some form. These data are difficult to verify, especially for the silent era, because – as Paolo Cherchi Usai maintains – 'there is no certain record […]. The few attempts at setting out a general filmography of the period failed because the number of titles was too large and reliable documents too

[32] Paolo Cherchi Usai, *The Death of Cinema*, p. 35.

[33] There is probably no point in trying to distinguish feature and documentary films within this total, since the first films produced did not make this distinction. According to Ronald S. Magliozzi (ed.), *Treasures from the Film Archives* (London: Scarecrow Press, 1988), p. xii: 'The difference between fiction films and so-called 'actuality' films is not as clear in the early silent period as we have come to define the difference between the fiction film and the documentary film today'. Also, it seems that the first stage of cinema did not have a purpose of pure entertainment. In fact, 'most subjects of early films were non-fiction, or *actualities*. […] Despite the variety of early genres, fiction films gradually became the most popular attraction – a position they have held ever since.' Quoted in David Bordwell and Kristin Thompson, *Film History: An Introduction* (New York: McGraw-Hill, 2003), p. 21. For a definition of the meaning of a 'lost' film, see Ray Edmondson and Andrew Pike, *Australia's Lost Films* (Canberra: National Library of Australia, 1982), p. 22: 'it usually means one that no longer exists or […] is not identified among the holdings of a film archive, production company, distributor or other publicly known organisation or collection.' See also David Pierce, 'The Legion of the Condemned: Why American Silent Films Perished', *Film History*, 9 (1997), no. 1, 5-22, republished in *This Film Is Dangerous: A Celebration of Nitrate Film*, ed. by Roger Smither and Catherine A. Surowiec (London: FIAF, 2002), pp. 144-62.

scarce, especially for the first decade of cinema's life'.[34] Unfortunately, a very early proposal to preserve films, put forward by William Kennedy-Laurie Dickson in 1895, was not successful.[35] Apart from the Danish archive (1913), it was approximately only thirty or so years later that most national film archives started to exist in Europe (Sweden, 1933; Germany, 1934; Great Britain, 1935; France, 1936; and Belgium, 1938).[36]

Many different reasons have been put forward to explain why film history can be considered more a history of what has disappeared than that of what is still available. The reasons for the destruction of films may be catalogued into two main groups: those intrinsic to the materials of which films were made and those due to human action or neglect. In practice the different reasons for the destruction of films are often closely linked and it can be quite difficult to separate them.

Film is formed of three main components: a *base* (a transparent and flexible support) that carries an *emulsion* (a gelatin where silver salts form photographic images) and a *binder* (a layer that links together base and emulsion). Furthermore, some layers may be coated in order to protect the emulsion or to prevent curling and mechanical damage. In the history of cinema different kinds of film base have been produced: the first and best known was the plasticized nitrate base, whose brand name was Celluloid, used until the 1950s.[37]

Unfortunately nitrate, 'the workhorse of the industry, the dispenser of dreams, and the window to a wider world for billions of people', can undergo chemical

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[34] Paolo Cherchi Usai, *Silent Cinema: An Introduction* (London: BFI, 2000), p. 10.
[35] William Kennedy-Laurie Dickson, *History of Kinetograph, Kinetoscope and Kinetophonograph* (New York: Albert Bunn, 1895) reprint by Arno Press, 1970 and by Museum of Modern Art, New York, 2000.. Also quoted in Cherchi Usai, 'La cineteca di Babele', in *Storia del cinema mondiale*: *teorie, strumenti, memorie*, 5 vols, ed. by Gian Piero Brunetta (Turin: Einaudi, 2001), V, p. 990.
[36] *Preserve Then Show*, ed. by Nissen and others (Copenhagen: Danish Film Institute, 2002); Cherchi Usai, 'La cineteca di Babele', p. 996; Gabrielle Claes, 'Managing a Collection: Issues of Selection and Transmission', in *Preserve Then Show*, pp. 180-5 (p. 180).
[37] See Harold Brown, 'Trying to Save Frames', in *This Film Is Dangerous,* p. 102.

breakdown, or decay.[38] This is an autocatalytic and exothermic reaction, that is to say nitrate will decay on its own and it will create heat, accelerating the process. Indeed, some compounds that form part of chemical reactions (the catalyst in this case being acid) are even produced during the reactions.[39] In this manner the degradation process is accelerated by heat and supported by moisture.[40] The chemical instability of nitrate film can also be attributed to the manufacturing processes of celluloid and to inadequate chemical treatments in film processing:[41] film that has not spent enough time in the developing tank or in the washing tank to remove all traces of the acids can show deterioration in which the image tends to disappear. Another unfortunate cause of film destruction is the well-known inflammability of celluloid.

Despite several problems concerning nitrocellulose film stock manufacturing and its tendency to curl and twist, it became 'the mother's milk of film art and industry'.[42] Indeed, quite soon the characteristic inflammability of celluloid showed itself in a very long list of fires.[43] Probably the most famous of these is the one that broke out on 4 May 1897 in Paris, at the *Bazar de la Charité*, where no fewer than 120

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[38] Sam Kula, 'Mea Culpa: How I Abused the Nitrate in My Life', in *This Film Is Dangerous*, p. 164.

[39] Combined with moisture, nitrogen oxides released by the decaying nitrate produce strong acids (e.g., nitric acid). These acids catalyze further base decay and cause hydrolysis that decomposes the gelatine binder.

[40] Nitrate chemical decay is described in many studies. See Jean-Louis Bigourdan, 'From the nitrate experience to new film preservation strategies' in *This Film Is Dangerous*, pp. 52-73; Peter Z. Adelstein, James M. Reilly, Douglas W. Nishimura, and Catherine J. Erbland, 'Stability of Cellulose Ester Base Photografic Film: Part IV – Behaviour of Nitrate Base Film', *SMPTE Journal*, 104 (1995), 359-69; *Restoration of Motion Picture Film*, ed. by Paul Read and Mark-Paul Meyer (London: Butterworth-Heinemann, 2000), pp. 247-8; Cherchi Usai, *Silent Cinema*, p. 12-3; Pierce, p. 9; <http://www.filmforever.org> [accessed 21 July 2010]; <http://www.filmpreservation.org/> [accessed 3 September2010].
<http://www.kodak.com/US/en/motion/support/technical/storage_nitrate.jhtml?id=0.1.4.11.12.12&Ic=e> [accessed 21 August 2010]; <http://palimpsest.stanford.edu/bytopic/motion-pictures/#deterioration> [accessed 21 August 2010].

[41] Deac Rossell, 'Exploding Teeth, Unbreakable Sheets, and Continuous Casting: Nitrocellulose, from Guncotton to Early Cinema', in *This Film Is Dangerous*, pp. 37-51. See also John Reed, 'Nitrate? Bah! Humbug! A Personal View from an Archive Heretic', in *This Film Is Dangerous*, ed. by Smither and Surowiec, pp. 219-25.

[42] David Brown's comment in *This Film Is Dangerous* (Guest editorials, Endorsements and Epigraphs), p.11.

[43] See *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 15. See also Roger Smither and Catherine A. Surowiec, 'A Calendar of Film Fires', in *This Film Is Dangerous*, pp. 429-53.

people from the nobility and monied upper classes died.[44] Even if the primary causes of several blazes seem to have been not nitrate itself but other factors – such as the generally inflammable liquids used in the illuminant (e.g. oxy-ether), the lack of safety shutters (dousers) in early projectors, and finally the incompetence of theatre owners and projectionists and human error (e.g. lack of winding spools to receive the film and no enclosed containers to protect it) – we can assume that nitrate was a very good fuel that helped to spread fires.[45] In addition, the inflammable nature of nitrate has shown itself to be a danger not only in the care of private or film producers' vaults, but also in the care of archivists. Paradoxically, in the last eighty years many fires have happened in film archives, exactly where one might expect them to be least likely.[46] Because of the concentration of films in the same place, fires in archives have also been the worst cases in terms of film loss.[47] The inflammability of nitrate films even seems to have become a source of dangerous entertainment for many children, as one might infer from a case recounted by the film archivist Madeline Matz (and other similar stories): when she was a child, she used to go with her friends 'around the backs of theatres' looking for 'trash cans' where they could find 'sometimes treasured reels with film left on them. […] Once found, we would run to a huge empty lot and roll the reel out so that the film stretched across the entire field. We would light the end of the film and watch it burn lickety-split across the field, leaving blackish scorch marks and puffs of yucky smoke

[44] H. Mark Gosser, 'The *Bazar de la Charité* Fire: The Reality, the Aftermath, the Telling', *Film History*, 10, no. 1 (1998), 70-89.

[45] Cf. David Cleveland, 'Don't Try This at Home: Some Thoughts on Nitrate Film, with Particular Reference to Home Movie Systems' in *This Film Is Dangerous*, pp. 191-7 (p. 191). 'It is undeniable that even the most accomplished operator working with premium equipment didn't follow all the guidelines all the time. Allowing projected film to collect in an open basket or bin was a relatively common practice, especially in the first few years of projection.' Gosser, p. 82.

[46] Disastrous fires that occurred in the USA have been reported by Pierce, p. 12. See also Houston, *Keepers of the Frame* (London: BFI, 1994), p. 2.

[47] An interesting case of a nitrate film which apparently resisted combustion is reported in Roger Smither and Catherine A. Surowiec, 'The Asbestos Screen and the Not-So-Flammable Nitrate', in *This Film Is Dangerous*, p. 33. In the case of the Cineteca Nacional fire in Mexico City, for instance, where 99% of the films were destroyed, it has been suggested that 'it was not nitrate which caused the disaster […], but the lack of an integral security plan.' Fernando Osorio, 'The Case of the Cineteca Nacional Fire: Notes and Facts in Perspective', in *This Film Is Dangerous*, pp. 140-3 (p. 143).

all the way. […] Perhaps it was my guilty conscience that drew me to film preservation as a profession.'[48]

In spite of its inflammability, the production of nitrate base was banned only in February 1951.[49] It seems that the fatal accidents in the movie theatres did not make the substitution of nitrate with safety film stock compulsory until it became profitable enough.[50] Also, the inflammability issue posed safety problems that, conveniently, required government control over cinema projections: in Britain, for example, the 1909 Cinematograph Act was approved as a measure against fires. Local authorities had 'to issue licenses to cinemas as a sign that the latter had carried out adequate safety precautions': a requirement that easily became a means to control film content. Thus 'the film industry itself approached the government and obtained the approval of Home Secretary Reginald McKenna for the establishment of the British Board of Film Censors (BBFC) as the industry's self-censorship body with effect from 1 March 1913.' [51] The film industry thus petitioned for the establishment of the BBFC as a way to regulate itself, avoiding direct and arbitrary intervention on the part of the government. Truth be told, neither the government nor the cinema owners had any real interest in promoting the use of safety film stock. On the one hand, the widespread use of safety film stock would have removed the need for government regulations regarding cinema projections and thus any possibility of indirect government intervention. On the other, since safety prints were not subject to government control, cinema owners were concerned about 'unlicensed, unregulated operators undercutting their admission prices and driving them

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[48] Roger Smither, 'Fiery Tails', in *This Film Is Dangerous*, pp. 495-523 (pp. 495-6).

[49] Today nitrate is still used in producing table tennis balls and capsules for explosive material. See both Cleveland, 'Don't Try This at Home', in *This Film Is Dangerous* pp. 191-7 (p. 197) and Sylvia Katz, 'The Degradation Nitrate Objects' in ibid., pp. 198-201 (p. 200).

[50] George Eastman in a letter of 5 May 1914 to H.D. Haight wrote that 'Four or five years ago […] we went into the subject and developed the manufacture of a cellulose acetate film which was used by our customers in this country exclusively for two years. They finally abandoned its use because the prospect of its use being made obligatory had faded away and because they did not like to pay the increased cost.' Quoted in Gosser, p. 84.

[51] James C. Robertson, *The Hidden Cinema; British Film Censorship in Action, 1913-1975* (London: Routledge, 1993), p. 1.

out of business'.[52] This could explain why there was no enthusiasm for adopting a new safety stock whose commercial use was not regulated, and in any case points to a certain 'industrial conservatism', in which the industry resisted the adoption of safety film both in order to avoid expensive changes in techniques and materials, and to defend the market from an uncontrolled exploitation of film.

Another reason for the decay of film is inadequate conservation conditions: these can accelerate the process of decay, for instance by bringing about the growth of organisms (fungus or bacteria) in the emulsion itself. In this case, the image will become corroded and partially illegible. Unfortunately, nitrate decomposition cannot be halted, but only slowed down, by controlling temperature and the relative humidity of the air. As a result, if films were not properly stored, they might be lost through chemical decay of the base and emulsion. [53]

The other ester of cellulose, the triacetate base, used since the 1950s as the safety substitute of nitrate film base, also tends to decay as a result of 'vinegar syndrome' (a hydrolysis reaction that weakens, deforms and finally destroys the plastic properties of the film)[54]. Its name derives from the characteristic odour of vinegar, the first sign of acetate-base decomposition that, because of acids emitted in chemical reactions, can affect other film nearby. It is mainly due to the environmental conditions of storage, especially high relative humidity and high temperature, and is an unstoppable process. At the beginning, it prevents films from being projected, and subsequently it makes it very difficult to duplicate them before their inevitable disappearance.

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[52] Enticknap, 'The Film Industry's Conversion', p. 203.

[53] Many studies have been conducted about the best film storage conditions. The range literature about this subject is huge. As a reference guide see the International Federation of Film Archives website <http://www.fiafnet.org/uk/> [accessed 21 July 2010] and <http://www.filmarchives-online.eu/> [accessed 30 August 2010].

[54] See *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 249.

All cellulose ester bases are dimensionally unstable: they shrink because of the loss of water, solvents and plasticizers, and become brittle and fragile. Unfortunately, the issue of preservation under the right temperature and humidity conditions was addressed too late to save many films. This is why Pierce lists this reason for film loss as 'indifference and benign neglect': 'many films were not destroyed before their time; they simply did not last long enough for anyone to be interested in preserving them.'[55]

In addition to these reasons for film loss, other complications arose as a result of conditions intrinsic to the nature of film. The very technical processes used to show films are often responsible for their damage, since printing and projecting cause scratches and tears because of the friction between the film and the equipment. Although this cannot be assumed to be a primary cause of film loss, one must bear in mind that film stock suitable for duplication of negatives was not available till the end of the 1920s (Kodak patented it in 1926), so that in many cases the camera negatives were used to print successive copies until the film was completely destroyed. The prints suffered the same fate since they 'were literally worked to death'.[56]

Another important factor in film loss was the evolution of film technology: the most important example is the success of 35mm, which progressively caused the disappearance of the other formats and, consequently, of many prints in obsolete gauges. In order to preserve and then show films from an earlier technological era, it became necessary to copy them onto a later medium. Unfortunately, this operation can be costly and it has meant choosing which films were worth copying and which were not. Film production companies have allegedly followed market reasons, ignoring or destroying films that were no longer commercially viable (e.g. silent films after the appearance of sound films). At the same time, in film archives this has been (and still is) a crucial issue: because of the shortage of funds, it has put archivists in the

[55] Pierce, p. 9.
[56] Edmondson and Pike, p. 27.

uncomfortable position of giving many films a death sentence – a feeling that Lino Micciché described as the 'Langlois syndrome'.[57] Archivists also based their decisions on assumptions about safety film stock that would be proved wrong over the decades: in a desperate effort to save nitrate films that were believed to be in danger of immediate decomposition, they rushed to make copies on triacetate stock, and hastily disposed of the nitrate copies, only to find that triacetate does not necessarily last longer than nitrate.[58]

It is a truism that commercial interests have always been tightly connected with the destruction of films. For example, many prints were chopped up to stop other people exploiting films without paying royalties and to avoid storage costs.[59] Copyright has been another reason why films have been deleted: copies of original films sold to new companies to be made into remakes were often destroyed by contract.[60] Films were also dispersed when production companies and developing and printing laboratories went bankrupt, since national film archives did not exist until the Thirties.

It would certainly be interesting to also explore the role official censorship has played over the years in the disappearance and mutilation of many films, although the issue has been widely investigated and exceeds the scope of this thesis.[61] In spite of the

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[57] Lino Micciché, 'La sindrome di Langlois', in *La memoria del cinema: restauri, preservazioni e ristampe della Cineteca Nazionale 1998-2001*, ed. by Adriano Aprà, Lino Micciché, Mario Musumeci, Quaderni della Cineteca (Rome: Fondazione SNC, 2001), pp. 11-14 (p. 11).

[58] Cherchi Usai analyzes the different phases of what he calls 'the massacre' of early films, dividing it into six distinct stages: the first fourteen years of the history of cinema; the 1909 meeting in Paris of film producers and distributors which inaugurated a new system of commercial exploitation of films; the passage from silent to sound cinema; the passage, in 1951, from nitrate to triactetate film base; the destruction, in the 1980's, of non-standard (non 35 mm) film gauges, after copying films onto magnetic tapes; the present time, which according to Cherchi Usai is moving towards the total annihilation of film stock (and consequent 'death of the cinema') because of the dominance of digital technology. See Cherchi Usai, 'La cineteca di Babele', pp. 972-8.

[59] Cherchi Usai, *The Death of the Cinema*, p. 20.

[60] Pierce, p. 6. Pierce also reports disconcerting cases in which negatives were actually intentionally destroyed by production companies to save on insurance and storage space, or because they had shrunk to the point of becoming useless (pp. 8-10).

[61] See Annette Kuhn, *Cinema, Censorship and Sexuality: 1909-1925* (London: Routledge, 1988); Robertson, *The Hidden Cinema*; Lee Grieveson, *Policing Cinema: Movies and Censorship in Early-Twentieth-Century America* (Berkeley: University of California Press, 2004); Anthony Aldgate, and James C. Robertson, *Censorship in Theatre and Cinema* (Edinburgh: Edinburgh University Press, 2005); Mino Argentieri, *La censura nel cinema italiano* (Rome: Editori Riuniti, 1974); Gian Piero Brunetta, *Storia del cinema italiano: il cinema muto 1895-1929*, 2nd edn (Rome, Editori Riuniti, 2001), pp. 57-70.

good intentions on the part of governments, shortage of funds remains one of the biggest obstacles to the preservation of films, and perhaps this is in part due to the fact that cinema has struggled to become accepted as a form of art, despite the UNESCO resolution approved in Belgrade in 1980.[62] Though there have been various, inevitable material reasons behind the demise of silent films (and unfortunately of films in general), a big part of the responsibility should be attributed to human (in)action, not only in terms of 'indifference or benign neglect', but – worse still – 'intentional destruction.'[63] Ironically, the same bodies that ought to have preserved films - production companies, institutions and film archives – have often been responsible for their vanishing.

The recent emblematic image of Taliban students burning film in Kabul, shown on 15 October 1996 during a BBC broadcast, testifies to yet another form of censorship, obviously linked to ideology. See Cherchi Usai, *The Death of the Cinema*, p. 68.

[62] 'Recommendation for the Safeguarding and Preservation of Moving Images 27 October 1980' in: <http://portal.unesco.org/en/ev.php-URL_ID=13139&URL_DO=DO_TOPIC&URL_SECTION=201.html> [Accessed 30 August 2010].

[63] Pierce, pp. 8-9.

1.2 Collection and Storage: Industry, Film Archives, Collectors

> We all have a responsibility to preserve the past for the future. The intentional burning of books and paintings is regarded as a cultural crime. How will future generations learn about the 20th century if, through our neglect, its greatest art form is lost?
>
> Martin Scorsese[64]

If only sixteen years after the release of *Queen Elizabeth* (1912) Sarah Bernhardt's 'single chance for immortality' was a 'disintegrating print in the storehouse of the Paramount laboratories' then perhaps it should have been possible to foresee how the attitude to the conservation of films was not adequately robust.[65] Films were indeed fragile, but the awareness of the intrinsic value of films was probably even more precarious. After the brief survey of the causes of dispersal and destruction of films provided in 1.2, a question that arises is whether it might have been possible to avoid such a 'massacre', in Cherchi Usai's words.

Governments were largely uninterested in the cultural value of films until the Thirties, and it was only then that national film archives were established to force film production companies to store their products properly. In this case 'product' means a new print, at least, and/or possibly a negative with grading records: to store properly means to keep films in environments built for this purpose, with machines controlling temperature and relative humidity (RH), people monitoring the films periodically and duplicating them as soon as they show the first signs of decay.[66]

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[64] Quoted in *This Film Is Dangerous*, ed. by Smither and Surowiec, p. ix.
[65] Will Irwin, *The House That Shadows Built* (New York: Doubleday, Doran&Company, 1928), pp. 224-25.
[66] See 'Conservation Strategies' in Alfonso del Amo Garcia, João Socrates de Oliveira, Brian Pritchard and David Walsh, *Film Preservation*, Fiaf-Technical Commission, 2004, pp. 220-88 [on CD-ROM], <www.filmpreservation.org> and <http://www.loc.gov/film/plan.html> [Accessed 30 August 2010]; see also Bigourdan, 'Film Storage Studies: Recent Findings' in *Preserve Then Show*, ed. by Nissen and

The problem, however, had already been debated in 1894, when Kennedy-Laurie Dickson presented the Kinetoscope as a new way to record historical events – more truthful and precise than chroniclers – and 'as a means of glorifying and preserving the national past.'[67] Robert William Paul, the British cinematographer, held the same opinion, and wrote to the British Museum in order to have his 'Animated Photos of London Life' preserved, since a film archive did not exist yet, in 1896 (his work was eventually preserved in the Science Museum).[68] After a few years, in 1898, Bolesław Matuszewski expanded the same idea in *Une Nouvelle source de l'histoire*, proposing to establish film archives to preserve films, which were supposedly more vivid than conventional written historical sources (a position that was not universally accepted).[69] What is particularly interesting is that in its early stages film preservation was linked not to art, but to history and education.

The first national film archive was established in Copenhagen in 1913 in order to store films of historical interest. Its founder was Anker Kirkeby, an enterprising journalist on the national daily newspaper *Politiken*, who 'arranged for filming to take place' in order to record 'cinematographic portraits of celebrated personages who may be of historical interest to posterity'.[70] In the next twenty-five years the archive would only receive just over a hundred films as new acquisitions and 'Kirkeby's dream' to

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others, pp. 40-51 and Peter Z. Adelstein, 'Optimizing Nitrate Film Storage', in ibid., pp. 52-86. However, some interesting cases of films that survived with no special care are reported in Paul C. Spehr, 'The Library of Congress and Its "Nitrate Problem": or, It Was Necessary to Destroy the Nitrate in Order to Preserve It', in *This Film Is Dangerous*, ed. by Smither and Surowiec, pp. 230-6 (p. 234) and Cherchi Usai, 'La cineteca di Babele', p. 984. See also Clyde Jeavons, 'Sunken Treasures: The *Lusitania* Yields an Archaeological Curiosity', *Sight and Sound*, 1 (1982-83), 4.

[67] See Dickson, *History of Kinetograph,* also quoted in Cherchi Usai, 'La cineteca di Babele', p. 990, and in Stephen Bottomore 'The Sparkling surface of the Sea of History: Notes on the Origins of Film Preservation', in *This Film Is Dangerous*, ed. by Smither and Surowiec, pp. 86-97 (p. 86).

[68] Houston, p. 9. The same article from *Photographic News* is quoted by Cherchi Usai, 'La cineteca di Babele', p. 992 and by Bottomore, 'The Sparkling surface of the Sea of History', p. 90, dated 21 July 1896, whereas Houston reports 18 December 1896.

[69] See Bolesław Matuszewski in *Film History*, 7 (1995), pp. 322-4. Also in <http://www.latrobe.edu.au/www/screeningthepast/reruns/mat.html> [Accessed: 30 August 2010].

[70] Esben Krohn, 'The First Film Archive', in *Preserve Then Show*, ed. by Nissen and others, pp. 186-95 (p. 187).

increase the collection thanks to the voluntary bequests of film production companies and governmental subventions did not become a reality.

The outbreak of the First World War added a new reason to keep films in safe places, since military actions could now be recorded. An interesting testimony is from the USA where

> the news reel, a European development, was bringing from European battlefields such glimpses as the censor allowed. Exhibitors varied even the long films with newsreels. People who had never entered a moving-picture show before came now to see with their own eyes *soixantequinze* batteries in action, German Infantry on the march, Italian Alpini scaling the precipices, the king reviewing his armies, the premier leaving Parliament House. They remained to watch the "feature", and so acquired the habit.[71]

In 1917 the Imperial War Museum (IWM) was planned in the U.K., with a film department that would preserve 'official war films, such as *The Battle of the Somme*, along with all its records, including the collection of paintings by war artists.'[72] It was not yet the 'public library of the near future' imagined by D.W. Griffith, where

> instead of consulting all the authorities, wading through a host of books, and ending bewildered without a clear idea of exactly what did happen, you will merely seat yourself at a properly adjusted window in a scientifically prepared

[71] Irwin, p. 224.
[72] Houston, pp. 12-3.

> room, press the button, and actually see what happened…There will be no opinions expressed. You will merely be present at the making of history.[73]

Unfortunately, as E. Foxen Cooper, the first custodian of the IWM film collection, noted, there was not yet a 'general desire to keep feature films'.[74] Indeed, in the same year in which the Danish film archive was created (1913), what seems to have been the first suggestion to preserve films came from an actor, Henderson Bland. He suggested that in the future it would be interesting to have some recordings of the acting styles of famous actors.[75] The same suggestion, in addition to a proposal to keep sound recordings, came in 1915 from George Bernard Shaw who foresaw 'for our young people' an educational role of the cinema, capable of preserving for posterity 'the – otherwise – fugitive fame of the actor's art which perishes with himself'.[76]

Both Cherchi Usai, in his painstaking reconstruction of the history of film archives, and Houston in *Keepers of the Frame* indicate the end of the silent era as the beginning of a new period for film preservation.[77] Indeed, while in Europe the national film archives came into existence during the Thirties, it is interesting to note that as early as 1920 the idea started to emerge that feature films should be preserved for their artistic value and not only for an historical, scientific or educational purpose: as a case in point, Bottomore quotes a 1920 article from the journal *Moving Picture World* significantly entitled 'Why not a film museum?'[78]. Some years later, Foxen Cooper wrote an article highlighting the importance of preserving films such as *Intolerance*,

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[73] Quoted in Anne Friedberg, *Window Shopping: Cinema and the Postmodern* (Berkeley: University of California Press, 1983), p. 181.
[74] Houston, p. 15.
[75] Bottomore, 'The Sparkling Surface of the sea of History', p. 88.
[76] George Bernard Shaw, *Metropolitan Magazine* (USA), May 1915, quoted in Low Warren, *The Film Game* (London: T. Werner Laurie, 1937), pp. 86-7, and also in Bottomore, 'The Sparkling Surface of the sea of History'p. 88.
[77] Cherchi Usai, 'La cineteca di Babele', pp. 989-1003. Houston, p. 17.
[78] See Bottomore, 'The Sparkling Surface of the sea of History', pp. 88-9.

Quo Vadis? and *The Four Horsemen of the Apocalypse*, in which he envisaged 'a library of the great films belonging to the various periods since cinematography came into being', adding, on a lugubrious note, 'if the negatives are still in existence'.[79] Incidentally, one may take note of the fact that here a selective principle is asserted: only films of artistic worth would be preserved. Such a principle, however, was not taken seriously by governments and museums at the time: 'We hardly look upon the cinematograph as a serious proposition yet', the British Museum officials reportedly stated when confronted with the issue.[80]

Theoretically, producers should be the first to be interested in preserving their works, and while the first person to deliver his work to an 'archive' was indeed a producer, Kennedy-Laurie Dickson, he did not have the issue of preservation in mind. In 1893, when he left a number of *Edison Kinetoscopic Records* to the Library of Congress, the aim was not to leave his work as historical documents for posterity, but to protect the copyright of his invention. Indeed, until 1897 he deposited only nitrate films, followed by cheaper records on paper-print copies.[81] However, in the years that have followed the film industry has not been as sensitive to the issue of preserving its products as Kennedy-Laury Dickson; rather, its raison d'être has usually been short-term commercial exploitation. Relations between films as objects to be preserved and their producers deserves further in-depth research; this should include distributors 'as the pivot on which the business turns', at least after 1909, when the film prints began to be rented and no longer sold to the movie theatre owners.[82] This was a turning point because from then onwards producers and distributors reserved the right to control the prints. At that time the never-ending fight against the illegal commercial exploitation of

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[79] Foxen Cooper, 'Historical Film Records The Life of the Nation: A Heritage for Posterity', *The Times*, (London), 19 March 1929, "Film Number", p. 7. Quoted in Bottomore, 'The Sparkling Surface of the sea of History', p. 89.
[80] Langford Reed, 'Film Archives: What Has Been Achieved', *The Bioscope*, 30 July 1914, pp. 471-3.
[81] Paul C. Spehr, 'Some Still Fragments of a Moving Past', *Quarterly Journal of the Library of Congress*, 32 (1975), 34-50 (p. 39), also quoted in Bottomore, 'The Sparkling Surface of the sea of History', p. 90.
[82] Ibid.

copies of films began. In order to protect their ownership and copyright interests, producers adopted a regrettable solution, which consisted of destroying most of their prints after the whole release circulation.[83]

Private collectors, on the other hand, did act as film preservers, and their work preceded that of national film archives and similar institutions. However, Cherchi Usai describes them as a 'secretive breed': 'They mistrust publicity and prefer sometimes to die with their possession rather than abandon them to what they consider to be an impersonal institution, lacking the enthusiasm and the protective instinct which made it possible to save the films.'[84] In a period in which films were still not considered potential works of art, these people were animated by a pure love for the cinema and invested their time and money to do something in which nobody seemed to be interested, not even governments. It was thanks to these individuals that, when national film archives finally came into existence, they were able to set up collections of considerable value. In Italy, for instance, Mario Ferrari and Luigi Comencini started to collect the silent films that formed the basis of the Cineteca Italiana in Milan; at the same time Maria Adriana Prolo was gathering films that would eventually form the Museo Nazionale del Cinema in Turin. In France, during the Thirties, Henri Langlois and Georges Franju looked for films to show at their *cinéclub* – the Cercle du Cinéma, core of the Cinémathèque Française, a private association. Film archives generally avoid mentioning their private sources but it would be very interesting to investigate the history of their acquisitions and examine the relations between them and private collectors.[85]

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[83] On 9 June 1910 L'Union des Grands Éditeurs de Films decided to destroy a huge number of films; the case is reported by Smither and Surowiec, 'Un auto-da-fé Sensationnel', in *This Film Is Dangerous*, by Smither and Surowiec, pp. 454-6. Edmondson adds that 'just as the average person discards newspapers, household appliances or automobiles when they have outlived their usefulness, the industry discards its old films.' Ibid., p. 29.

[84] Cherchi Usai, *Silent Cinema,* p.78.

[85] Two interesting websites on this issue: <www.collect.com> and <www.classicimages.com> [accessed 21 July 2010]. Cherchi Usai quotes also two US magazines in 'La cineteca di Babele', p. 982: *Big Reel*, P.O. Box 1050, Dubuque (Iowa) 52004-1050 and *Classic Images*, 301 E. 3rd St., Muscatine (Iowa) 52761.

When film archives were established, feature films were eventually recognized as the expression of an art peculiar to the twentieth century, worthy of being preserved along with paintings, sculptures and other works of fine art. However, Houston notes that this awareness was not the main reason why film archives were created. The so-called 'big four', the founders of FIAF (Fédération Internationale des Archives du Film), namely the Reichsfilmarchiv (Berlin, 1934), the Museum of Modern Art Film Library (New York, 1935), the National Film Library (London, 1935) and the Cinémathèque Française (Paris, 1936), 'were founded by very different organisations and people, for very different purposes […]. None of them had anything specifically to do with the task of preserving silent cinema'.[86]

The Reichsfilmarchiv, which had as its forerunner the private Wolffsohn Archive, was established by Joseph Goebbels, the Nazi Minister of Propaganda.[87] The Museum of Modern Art Film Library, supported by a grant from the Rockefeller Foundation, was conceived as a department of the Museum of Modern Art. In London the National Film Library (NFL), born in 1935 as a part of the British Film Institute (BFI) and later renamed the National Film Archive (NFA), had an educational purpose as a primary objective. It was funded with public money after three years of debate that had begun with the report of the Commission on Educational and Cultural Films, *The Film in National Life* (1932). When the NFL's aims were finally established it was decided that, as well as being a 'repository of films of permanent value', it would set out 'to encourage the development of the art of the film, to promote its use as a record of contemporary life and manners and to foster public appreciation and study of it from these points of view.'[88] In Paris, as previously mentioned, in spite of the existence of a national film archive (Cinémathèque Nationale, 1933), the Cinémathèque Française, a

[86] Houston, p. 18.
[87] Eva Orbanz, 'Preservation and Restoration in Germany: The History of German Film Archives', in *Restoration, Preservation and Destruction of Films*, ed. by Luisa Comencini and Matteo Pavesi (Milan: Editrice Il Castoro, 2001), pp. 79 – 96 (p. 89).
[88] Ibid., p. 21, p. 26.

private and much more active association, was born thanks to the work of Jean Mitry, together with Langlois and Franju, and funded by Paul-Auguste Harlé, director of the magazine *La Cinématographie Française*. Langlois and Franju's first aim had been simply to show films in their Cercle du Cinéma and this purpose was maintained over the years.

Interestingly, the issue of whether to preserve and/or to show films was hotly debated at the time, and it seems to have arisen well before the existence of film archives. [89] Guillaume Apollinaire famously reported an episode in which, having gone to the Bibliothèque Nationale to consult a number of films and scripts deposited for copyright, he was denied access to them and his request to watch ten films was considered 'a little unreasonable'.[90] There are two elements in particular that make this episode particularly interesting: the first is the adjective 'fragile', used by the clerk who refused to fetch the films, to refer to them as objects to be preserved; the second is the evidence it provides of the lack of projection equipment in the library. Clearly, the fragility of films has been one of the strongest reasons why access to film archives has often been so difficult, but the lack of equipment points to the fact that showing films has not always been an agreed aim of film archives. In effect the museological purpose of showing films, exemplified by Langlois' position, seems to be in conflict with the archival purpose of preserving them (an opinion notably held by Ernest Lindgren), since the projection exposes the prints to the risk of physical damage (scratches, tears, colour fading).

Today, the archival movement has elaborated another policy that consists in reconciling these different and apparently opposite purposes: it is well described in

[89] As Cherchi Usai shows, the names of these institutions (archive, museum, library) reflect this crucial issue: see 'La cineteca di Babele', pp. 965-7.
[90] Pascal Hédegat [pseudonym for Guillaume Apollinaire], 'Le Cinéma à la Nationale', *L'Intransigeant*, 1 March 1910, pp. 1-2, quoted in Bottomore, 'The Sparkling Surface of the sea of History', p. 94.

Preserve Then Show, a book published by the Danish Film Institute.[91] The granting of access to film archives is still in fact a widely-discussed issue, especially since in recent years the shortage of public funds has obliged film archives to try to exploit their collections by programming and connecting their work to universities and film departments.[92] In Houston's words, 'all museums […] have had to become part of show business'.[93] However, film museums are still largely inaccessible to the general public, while one of their functions should be to educate people to watch films on screen, a very different experience from watching a film on video or television.[94]

Yet, showing films has always been not only an ethical issue but also a legal problem that involves copyright issue and relations between trade and film archives. In fact, the foundation of FIAF in 1938 seems to have met an unstated demand for protection against possible attacks and requests from copyright holders to film archives.[95] This is why FIAF as an international institution stated that its members would not act for the sake of gain. The root of the problem was, and still is, that often film archives are not the owners of films, but only the keepers. They are not entitled to exploit films commercially, even if they have been restored thanks to the work (and funds) of the archive itself. They have therefore always been under the threat of requests from film production companies to return films in their possession. This can partly explain the policy of secrecy adopted by film archives at least until the 1970s. Another reason is that acquisition of prints has been a troubled matter for institutions whose aim is film preservation.

The history of film archives has been characterised by a persistent lack of a legislative basis on which to secure films. From the outset the film industry has been

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[91] *Preserve Then Show*, ed. by Nissen and others.
[92] See, for instance, the East Anglian Film Archive provided by the University of East Anglia at Norwich.
[93] Houston, p. 95.
[94] See *FIAF Code of Ethics*, ed. by Roger Smither (Brussels: FIAF, 1998), quoted in Cherchi Usai, 'La cineteca di Babele', p. 1004.
[95] The history of the FIAF and problems related to copyright is analyzed in Cherchi Usai, 'La cineteca di Babele', p. 998-1005. For copyright legislation in the United Kingdom see the 1988 Copyright, Designs and Patents Act, <http://www.screenonline.org.uk/film/id/445754> [accessed 30 August 2010].

suspicious about any potential state control over production. This is why, for instance, the birth of the NFL in the UK was obstructed by the film business (especially by US producers) and three of the nine governors on the board were from the industry.[96] The subsequent history of film acquisition can aptly be described as an absurd dependence of the NFL on film production companies, both for the quantity of films handed over to it and for their quality.[97] Ironically, it seems that the smaller the film companies were, the friendlier they were with the film archive. Unfortunately, quite often they did not have 'spare prints' to give to the film archive because of financial problems. In 1969 the battle, led by Ernest Lindgren, to obtain a statutory deposit of films was unfortunately unsuccessful.[98] In Italy, just four years earlier, a law had been passed to compel Italian producers to deposit a copy of their films with the Cineteca Nazionale.[99] In the same years the negotiations between FIAF and FIAPF (International Federation of Film Producers) that should have regularised the archives' position in relation to the copyright holders were not so productive. The producers insisted that 'all films deposited in an archive remained the property of the film-makers'; the strongest film archives did not agree, the weakest signed the agreement.[100] The issue is still far from being resolved. Lately there has been a proposal to grant film archives a sort of 'guardianship' that includes exploitation rights. There are two reasons behind this: the increasing work in film restoration being done by film archives and the objective difficulty of ascertaining the copyright holders of films (those with no known owner are

[96] Houston, pp. 23-36.
[97] The problem of the quality of prints delivered by film production companies to film archives there has also been present in Italy, in spite of the law there requiring statutory deposit.
[98] In the United Kingdom, as in many other countries, there is not yet a law on obligatory deposit of film.
[99] See L. 1213, 1965 and L. 153, 1995.
[100] Houston, pp. 70-1.

defined as 'orphan films').[101] Possibly, in the future, film archives will slowly become owners, not only of the material objects, but also of the copyright.[102]

One turning point in the history of film archives which is worth mentioning in closing was the 1978 FIAF congress in Brighton, at which David Francis, director of the National Film Archive, organized a massive projection of 548 early films, which gave a new impetus to research in film history as well as fostering wider collaboration among film archives that had too often worked in separate paths.[103] In the wake of Brighton, the *Giornate del Cinema Muto* in Pordenone began in 1982. From then onwards many international projects and associations have come into existence: ACE (Association des cinémathèques européennes, 1996), the MEDIA Programme (*Mésures pour encourager le dévéloppement de l'industrie audiovisuelle*), the Joint European Filmography, the Gamma Group for film restoration research, the Archimedia project, the *Projecto Lumière*, the American Film Institute, the National Film Preservation Foundation, the Association of Moving Image Archivists (AMIA) and many others.[104] The purpose of film archives is increasingly oriented to film restoration, but the more urgent problem both film archives and associations have to face is still the chronic lack of money and staff. This has caused many, especially in Europe, to look for private funding, changing their policies in order to try to exploit their collections. This is why 'the director of the future is expected to have good international and national networks in order to safeguard cash flow', a situation which, however, prompts the 'fear that future managers will emphasize commercial success rather than restoration and research.'[105]

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[101] Steve Laggett of the National Film Preservation Board has located a use of the term 'orphan film' as early as 1992. See <http://www.sc.edu/filmsymposium/archive/orphans2004/orphanfilm.html> [accessed 30 August 2010]. Cherchi Usai attributes the invention of this term to David Francis in 1993.
[102] This issue was debated by Wolfgang Klaue at the 1992 FIAF Congress in Montevideo. See Houston, p. 71.
[103] Cherchi Usai, 'La cineteca di Babele', p. 1003.
[104] Ibid., pp. 1006-12.
[105] Ghislaine Jeanson, 'Film Archives in Europe', in *Restoration, Preservation and Destruction of Films*, ed. by Comencini and Pavesi, pp. 51-2.

The archival efforts described call to mind the same logic of religiously careful preservation that the Alexandrians in the 3rd century BCE, or the Benedictines in the middle ages, followed when copying ancient literary works to preserve and deliver them as a cultural heritage to future generations. However, even the films that have survived are not necessarily safe from future decay. Although technology has changed, the attempt to assure the survival of works of art is still a work in progress and a challenge, making *film restoration* a current buzzword, a term often linked both to film preservation and film showing.

1.3 Written on Water: Some Theoretical Reflections on Film Restoration

> If the colours in Rembrandt's *Nightwatch* or the *Mona Lisa* of Da Vinci faded as quickly as those in nitrate and acetate film, neither national governments nor audiences would doubt the need to restore them, no matter what the costs.
>
> Ghislaine Jeanson[106]

In the collective imaginary of our culture, cinema is considered to be eternal, an entity removed from everyday events in the world and not part of the natural cycle of life and death. Even the terms that are used about cinema suggest a world beyond our own mortal one. For example actors are 'stars', 'divas', 'idols' or 'leading lights'. The supposedly eternal nature of films still remains in the minds of many, filmmakers included. It is perhaps the desire to be part of this supposedly perfect and eternal world that pushes so many towards a career in the film industry. And yet films do not last forever. They constitute a very perishable form of art, since the material of which they are constituted tends to decay rapidly, if not stored in a controlled environment (temperature and relative humidity levels). In addition, the simple use (and misuse) of negatives in the laboratories and prints in projections may cause damage to films. This explains why films – though cinema is a relatively recent form of art – are already in need of restoration.

Restoration is a term that has been applied to the most diverse fields (even gardens and landscapes). From a historical point of view, the term is quite modern: it has been used since the second half of the 18th century.[107] In its most basic sense, restoring means attempting to give the work of art the closest approximation to the appearance that, it is believed, the author(s) intended. To use Nicola Mazzanti's definition, 'the aim of restoration is to restore a work that has undergone modifications;

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[106] Jeanson, p. 43.
[107] For a fuller discussion of the term 'restoration' see 1.4.

that is to say one that has reached us in a "corrupt" version, either in its narrative or figurative (formal) form.'[108] Cesare Brandi further specifies in his theory of restoration that 'we only restore the material of a work of art', which makes it very important to know what the object of the restoration is and how to deal with its specific characteristics.[109] Brandi, who established the Institute of Restoration in Rome in 1939, argued that the material of every work of art consists of two elements: aspect and structure. The first indicates the appearance, the image that the work of art delivers to the audience; the second refers to the 'carrier' that supports the image of the work of art. For example, in a painting, the discernible image or figure represents the 'aspect' of the work of art, while the canvas (or plaster, wooden panel, etc.) might be called the 'structure'. Apparently, the aspect might seem to be more important than the structure, but the latter should not be underestimated, because it has an influence on the aspect: it affects its consistency, colour, density and transparency.

When dealing with a film, the aspect can be defined as both the image projected onto a screen and the 'text', in the sense of a whole whose parts (frames, shots, scenes and soundtrack) are closely linked. The structure, on the other hand, will be the base and the photographic emulsion on which the images are printed. The structure of a projected film is highly 'physical' and can affect the aspect, because the structure has technological characteristics that cannot be ignored in favour of the aspect or the 'text': one obvious factor is that light penetrates the whole structure of a film strip. But perhaps the most distinctive feature of films is the fact that there is a physical distance between the structure (the film to be projected) and the aspect (the film projected on screen). Thus, the environmental context in which films are projected might be considered an integral part of the structure of the work.

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[108] Mazzanti, p. 26.
[109] Cesare Brandi, *Theory of Restoration*, trans. by Cynthia Rockwell, 1977 edn (Florence: Nardini Editore, 2005), p. 7.

A recent attempt to define film restoration by contrast with another discipline is Nicola Mazzanti's comparison between films and books. He claims that 'the text/film has a "formal" content which is much more relevant than that of a book […]. Variations on a text, such as footnotes, square brackets, etc. cannot be made in a film, otherwise the narrative structure […] becomes fragmented, and thus destroyed'.[110] Among the characteristics peculiar to film, it is important to remember that in a film the stock is thousands of metres long, and carries a very high amount of images. The film's structure is a plasticized base that bears a binder joined with an emulsion, an organic material with silver grains in suspension, but the film's aspect is not simply the emulsion or a reel stored in a can. The aspect will be what is projected onto a screen, a text that flows in front of the audience, in a specific time of fruition.

It should be noted that the film projected onto a screen is a positive print, struck from a matrix called the negative. In order to show a film that has undergone physical and chemical decay, or simply a nitrate film (nitrate stock, as discussed in the following section, has been banned from production and projection), it is necessary to duplicate it onto another carrier. The technical analogue (film-on-film) duplication routes can vary accordingly with the material (e.g. print or negative), but they always involve both different transfers in the printing procedures and the use of different materials (e.g. panchromatic instead of orthochromatic film) that might change the original photographic characteristics (e.g. photographic contrast and sharpness).[111] Furthermore, the different components of a new base (e.g. polyester instead of nitrate) may influence the transparency of the images and thus the aspect.

As a matter of fact, today, not only are the quantity and disposition of silver grains in the modern emulsion different from those of nitrate films, but new film stocks also have a different spectrum of light absorption, and projectors are equipped both with

[110] Mazzanti, p. 24.
[111] On sensitometry and quality control, printing, grading and principles of duplication and contrast control see *Restoration of Motion Picture Film*, ed. by Read and Meyer, pp. 105-66.

electric engines that stabilized the speed of projection and with Xenon lamps that produce a more powerful, 'bluish' light (about 6,500° K), different from that of the old carbon-arc lamps (5,000° K).[112] Moreover, the lenses produced until the Second World War were uncoated, which affected the contrast of the projected images. Finally, modern screens reflect the light differently: sound films required a change in the shape of the screen that became perforated for the behind-the-screen speakers. Because of the high reflectivity and low light absorption, the images looked 'brighter and crisper than those projected onto even the latest perforated sound screen'.[113] In addition, modern screens reflect the light differently and have a longer rectangular shape. An interesting additional fact is that smoking, which created a slight blue filter to the images projected, is no longer allowed in cinemas. In brief, today the aesthetic experience of the audience, as well as the historical, social, cultural context of production is radically different from that of past audiences.

However, one of the defining characteristics of a film is that, unlike most works of fine art (e.g. a painting), films are designed to be reproduced in multiple copies for commercial exploitation. A painting cannot be reproduced without losing its authenticity, as Walter Benjamin famously argued in his definition of the 'aura' of a work of art, which is based precisely on its being 'hic et nunc', here and now, and never ubiquitous.[114] Benjamin's reflection on the new technological reproducibility of works of art led him to assume that the 'aura' of the works had been destroyed, with, however, the result of bringing art closer to the audience. In a historical perspective, it is interesting to note that Benjamin developed this concept in a period in which film production technology was about to be standardized and the differences among prints were decreasing. In fact, it was only in 1926 that Eastman introduced the first high-quality duplicate negative film in order to duplicate prints, which eliminated the need to

[112] Jeanson, p. 50.
[113] John Reed, p. 224.
[114] Benjamin, p. 31. See note 30.

shoot with different cameras at the same time. Among other factors, 'this made it possible to send duplicate negatives to foreign countries for making release prints that usually included subtitles in the language of the host country.'[115] Later, in the passage from silent to sound film production, earlier forms of workmanship, such as the hand colouring of films or tinting and toning, became redundant and were replaced.

A film – both as a 'structure' (the stock, the copy printed by a camera negative) and as a text (different versions and editions with the same title) – is always a historical document, regardless of whether or not it is considered a work of art. Films bear witness to their time (as do clothes, buildings and transport systems)[116] as well as to the work (of art?) that they represent (what Paolo Cherchi Usai calls the 'internal history' of the copy) and to film history itself.[117] The very collective nature of films as works produced by screenwriters, directors, composers, cinematographers, editors, etc., makes it all the more important to define practices for the preservation of all the different parts that come into play in a film (thus, not only the physical reel, but also the screenplay, the score, and so on).

These characteristics of films as works of art can be useful in defining theoretically what 'film restoration' means and which disciplines need to be included in it. According to the definition of the restoration of a work of art (the reconstruction of its aesthetic and material unity, its functionality and appearance), one can assume that film restoration has two purposes. The first is to make films visible (and audible) by repairing the film/object, damaged frames and sprocket holes, and transferring the images from one support to another (duplication) because of the eventual shrinkage and chemical decomposition or the non-projectable nitrate base of the films. This is the so-

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[115] Robert A. Fisher, ed., 'Salute to Kodak' in *The Hollywood Reporter*, 25 June 1986, S1-S40 (S-10).
[116] One very recent example is the remarkable discovery of 826 rolls of nitrate film in sealed barrels in the basement of a shop in Blackburn, which document the everyday lives of people at work and at play in England, Scotland, Ireland and Wales (thanks to the work of filmmakers Sagar Mitchell and James Kenyon). This material, restored by the BFI, was shown at the NFT, London, in February 2005, as *The Lost World of Mitchell & Kenyon: Edwardian Britain on Film*. See also Penelope Houston, pp. 9-22.
[117] Cherchi Usai, *Silent Cinema,* p. 156; see also Christie, pp. 78-80.

called 'museological' purpose. In this case fine art restoration can be the guiding discipline. The second purpose is to reconstruct the film/text (*restitutio textus)*, preserving all materials related to them (different versions and editions, documents, scripts, screenplays and equipment). This might be called the 'archival purpose'.[118] In this case, textual criticism (or philology) can be the guiding discipline. In addition, as Casper Tybjerg maintains, codicology can be taken into account as 'a historical subdiscipline, a technical tool, like paleography […] and it can be described as the branch of textual criticism that deals with the carrier, the physical object, and therefore provides a good analogy for the activities of those who work directly with old prints.'[119]

The museological and the archival purposes can be in conflict with one another: projecting a film means that the print will be subject to wear and tear, regardless of the original equipment necessary to show it, which is often no longer in existence. 'An archive could sacrifice print and equipment in the name of the museological purpose, or put everything under lock and key, but then nobody will ever see the film again in the way it was intended'.[120]

Even the mere decision of what to restore and how is complicated in the case of films by the fact that a single title may have been attributed to many different versions: a famous case in point is the fact that the first edition of *Intolerance*, shown in 1916 in New York, is no longer extant, since it was cut and edited by Griffith himself multiple times (as indeed authors of literary and pictorial works also often do). Given that 'films exist in different versions and editions', the most important problem the restorers have to face is to establish which version of any film should be restored.[121] For a silent film

[118] Mark-Paul Meyer, 'Work in progress: ethics of film restoration and new technologies', p. 1, <http://www.amianet.org/> [Accessed 21 July 2010].
[119] Tybjerg, pp. 17-8.
[120] Meyer, 'Work in progress', p. 3.
[121] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 70.

production, for instance, one might use the hypothetical genealogical tree proposed by Cherchi Usai (Fig. 1.1). [122]

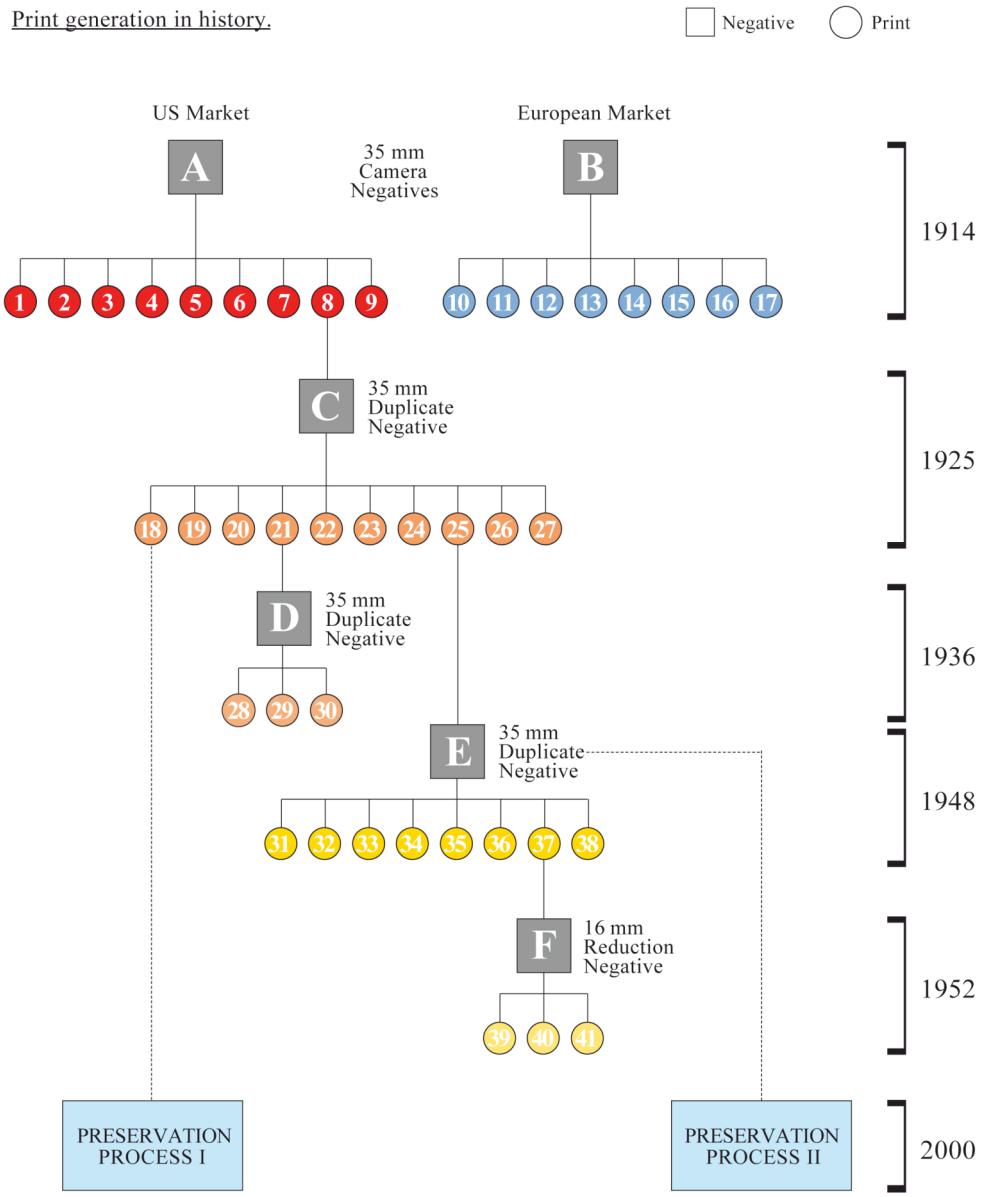

Fig. 1.1 'Genealogical tree' of silent film production. This is an abridged and modified version of Fig. 1 in Cherchi Usai, *Silent Cinema*, p. 46. It should be noted that any passage from one generation to another 'always creates a lacuna' in the photographic quality of a film, which does not necessarily happen in duplicating a literary text [123]

The foregoing example of Griffith's film *Intolerance*, as well as the reference to Cherchi Usai's proposal for a geneaological tree of silent films, are intended to introduce a reflection on just how complex things become when dealing in particular

[122] Both in Cerchi Usai, *Silent Cinema*, p. 46, and Cherchi Usai, 'La cineteca di Babele', p. 986.
[123] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 75.

with silent cinema, which is the period investigated in the present research. In fact, not only are silent films obviously the oldest and thus least well-preserved titles in film history (when they have not been completely lost), but their peculiar structural characteristics create technological problems that are as thorny as they are fascinating.

It should be noted that in the silent era films were often shot with different cameras at the same time or, sometimes, re-shot entirely. This production characteristic was above all justified by the lack of duplicating film materials, which were introduced only in 1926: in order to have more than a single negative from which only a limited number of copies could be produced, it was quite common to create different editions. Paul Read and Mark-Paul Meyer report the example of *Rescued by Rover,* directed by Cecil Hepworth in 1905.[124] As was usual at the time, copies were sold directly to the cinema halls. Because of the film's great success and the subsequent destruction of the camera negative, used to print many copies, the director was forced to shoot a second, and eventually a third, version of the film. In between versions, the very young actress who played the leading role (a little girl saved by a dog) grew older, and the difference in age in the different versions is quite noticeable. A restorer dealing with this film must choose only one of the three versions, since mixing shots would create a patchwork, a film that never existed.

The concept of an 'original' version is thus very hard to define, and this is especially true for silent films, often shot with different cameras at the same time or entirely re-shot, and then edited in order to be exported to different countries. Therefore, 'it is not sufficient to say that a restorer will, or must, restore the "original" version […]. Also a censored version of a film could be considered as an "original" version, since it is that version that was seen by the audiences'.[125] Clearly inspired by Eileen Bowser's

[124] Ibid., p. 71.
[125] Ibid.

'Some Principles of Film Restoration',[126] Read and Meyer list the options available to the restorer. He or she can restore:

> the film as it is in the restorer's hands;
>
> the film as it was seen by its first audiences;
>
> the film as it was seen by later audiences;
>
> the film as it was intended by the film maker(s);
>
> a version that is meant to be seen by a modern audience;
>
> a new version, the reworking of the original version through a contemporary artist;
>
> a new version for commercial exploitation.[127]

It may be noted that the term 'restoration' is not applicable to the last two options. As an example, it is sufficient to consider George Lucas's re-edition of *Star Wars* (1977) in 1999, in which he enriched the original version through the use of digital effects, or Giorgio Moroder's work in 1984 on *Metropolis* (dir. Fritz Lang, 1927), to which he added a new pop-rock soundtrack, replacing the original intertitles with subtitles. To return to the term 'original', it is significant that the *FIAF Cataloguing Rules* offer no definition of the term, while the first release seems to be assumed to be the 'original version'.[128] More recently, the new concept of 'authentic version' has been proposed as an alternative to 'original'.[129] The idea of an 'authentic

[126] Eileen Bowser, 'Some Principles of Film Restoration', also translated into Italian in *Griffithiana*, 11, nos 38-39 (Oct. 1990), 170-3.
[127] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 71.
[128] http://www.fiafnet.org/uk/publications/fep_cataloguingRules.cfm [accessed 31 August 2010].
[129] The term 'authenticity' is critically presented by Cherchi Usai, 'La cineteca di Babele', p. 1034.

version' may be better defined as a 'critically given and defined version':[130] in other words a version that actually existed in some form in the past and that can be reconstructed and replicated as precisely as possible. Thus, Mazzanti and Farinelli have claimed, the restoration work recently carried out on *Touch of Evil* (Orson Welles, 1958) should be rejected as inadequate: the restoration was based on Welles's correspondence with the production company, in which he requested a number of modifications. Yet, although this version can be reconstructed through the documents, it never actually existed: no one ever viewed it, and Welles might have asked for other modifications after seeing this version.[131] In conclusion, the concept of 'authentic' might prove more useful than that of the 'original' in defining a theory and a method of film restoration.

It should be added that the documentation of every decision and action taken by the restorers is extremely important, since it meets the demand for reversibility that is one of the key concepts in the theory of art restoration. As Read and Meyer stress, 'the demand of reversibility means in film restoration that nothing of the original material should be altered in such a way that the restoration cannot be done again'. 'Reversibility' in film restoration, therefore, also entails 'repeatability'.[132] This is why it is so important that future researchers and restorers have access to the same sources: thanks to this documentation and to the preservation of original materials, future (and possibly different) restorations will be possible. After the philological work aimed at deciding what has to be reconstructed, restorers have to deal with the material, the film/object, with the manifest purpose of restoring the film/text. After gathering, examining and critically selecting materials, film restoration in its most basic form consists of cleaning, repairing and copying them, in order to preserve them.

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[130] 'Versione criticamente data e definita', quoted from Gianluca Farinelli and Nicola Mazzanti, 'Il restauro: metodo e tecnica' in *Storia del cinema mondiale: teoria, strumenti, memorie*, V, 1119-74 (p. 1152). Author's translation. Unless otherwise specified, translation from the Italian are by the author.
[131] Ibid., p. 1153.
[132] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 71.

Undoubtedly, duplication of the photographic materials is the core of film restoration. However, it always entails a loss of information as a mere effect of the duplicating act, at least when dealing with photochemically produced photographs and films (with which the present research is concerned). And even when dealing with digital photographs and video, digital technology's widely advertised promise of reproducibility without loss of information is rarely carried out in practice.[133] Such a loss becomes all the more serious when a number of misguided practices are taken into consideration: for instance, the duplication of silent films in black and white, though most of them were all or in part coloured. Today this is commonly regarded as a mistake, but archives have been duplicating silent films in black and white for years, taking notes of the colours and, after duplication, destroying the original prints.[134] According to Desmet and Read, 'restoration of coloured monochrome films was, until the 1960s, carried out almost exclusively by conventional black and white duplication and the colours were simply recorded in writing'.[135] Apart from such a mistaken practice of restoration, which eliminated the reversibility of the intervention, even greater losses have been incurred, such as the recent mysterious disappearance of paper grading records stored in film cans in an important European archive.[136] It will not be possible to restore the films in question, even in a minor fashion, without finding other original materials.

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[133] On this issue, see Lev Manovich, 'The Paradoxes of Digital Photography', 1995, <http://www.manovich.net/TEXT/digital_photo.html> [accessed 30 August 2010].

[134] 'For many years nitrate film was considered discardable after being copied onto safety stock, but archives and studios have rethought this policy. Even the best current safety-film copies have proven incapable of reproducing nitrate film's subtle visual qualities. Except when dangerously deteriorated, nitrate should be retained for reuse as duplication technology improves.' 'Redefining Film Preservation: A National Plan in Consultation with the National Film Preservation Board', in <http://www.loc.gov/film/plan.html> [accessed 25 July 2010]. See also Cherchi Usai, 'La cineteca di Babele', p. 975, and Mark-Paul Meyer, 'Nitrate, Take Care', in *Restoration, Preservation and Destruction of Films*, pp. 53-6 (p. 55).

[135] Noël Desmet, Paul Read, 'The Desmetcolor Method for Restoring Tinted and Toned Films' in *All the Colours of the World: Colours in Early Mass Media 1900-1930*, ed. by Gamma Group (Reggio Emilia: Edizioni Diabasis, 1998), p. 147.

[136] In a personal conversation with the author, João de Oliveira surmised that it may have been decided to throw away all the paper grading records to avoid possible damage to the film base from the acidity of the paper.

Fortunately, archives now restore these films in colour, though the problems arising from different materials and technology remain, so that today it is impossible to reproduce those colours exactly as they were in the authentic materials. Films are now never coloured by hand, using a stencil process, or by immersion in dyes (tinting), as was once done. Contemporary multilayer film stock is intended for modern colour films and it has completely different characteristics.

Different techniques have been invented to reproduce colours in a satisfactory way: the Desmet method, for instance, is used instead of a colour internegative. Yet, the technology is still very different, as are the materials used for this purpose. Therefore, the result may be defined as an approximation (Fig.1.2).

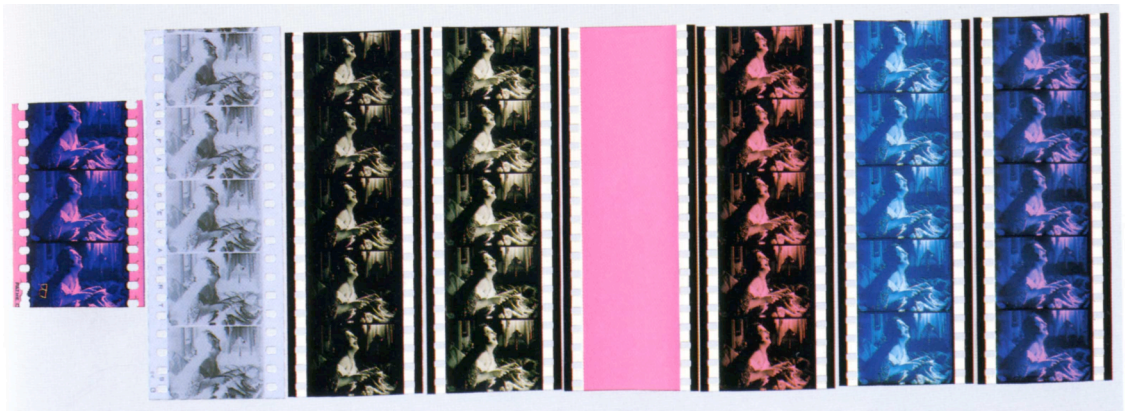

Fig. 1.2 'Stages in the Desmetcolor Process restoring a tinted and toned image'[137]

Other attempts have been made to reproduce the same technology of the time in order to duplicate the colour characteristics of silent films as precisely as possible, but since nitrate bases have not been in use since 1951, the transparency of the film base (triacetate or polyester) is slightly different. Film restoration cannot reverse the

[137] In *All the Colours of the World: Colours in Early Mass Media 1900-1930*, ed. by Gamma Group (Reggio Emilia: Edizioni Diabasis, 1998), p.181. Also in *Restoration of Motion Picture Film*, ed. by Read and Meyer, plate 6.

direction of time: It 'always creates a lacuna, a difference between the original and the duplicate'.[138]

Once it is accepted that film restoration is a simulation of the original image and sound, the way to new technologies is open. The discussion of this issue is still very heated and it is possible to summarize it in three points of view. First, 'every print of a film is a unique object, with its own physical and aesthetic characteristics, and should not be treated as identical to other prints with the same title'.[139] Second, 'if it is not possible to make something exactly the same, it may be possible to recreate something of the same effect as in the original.'[140] Third, 'the film is not destroyed when any of the prints are destroyed, including the negative or master. Indeed, all the prints can be destroyed and the film will survive if a laser disk does, or if a collection of photos of all the frames does'.[141]

This theoretical discussion is closely linked to other technical matters: the use of digital technology, for instance, which poses ethical and technical questions. Apart from the problems of cost and time, the transfer of information from one medium to another involves a change from an analogue to a digital (numeric) system of information recording and storage, so that cinema undergoes a sort of 'genetic mutation'. 'Digitalization […] transforms a continuous variation (sound modulation or the photographic tone scale) into an intermittent series of data.'[142] Furthermore, the alteration of image or sound made during the transfer can never be reversed or analyzed in a rational way: this is worrying in the case of digital software filters used to remove scratches and grains of dust 'sometimes […] recognized as extraneous when they make up part of the image. The greatest problems are with elements which appear in only one

[138] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 75.
[139] Cherchi Usai, *Silent Cinema*, p. 147.
[140] *Restoration of Motion Picture FilVenturinim*, ed. by Read and Meyer, p. 76.
[141] Noël Carroll, 'Towards an Ontology of the Moving Image', in *Philosophy and Film*, ed. by Cynthia A. Freeland and Thomas E. Wartenberg (New York: Routledge, 1995), pp. 68-85 (p. 77). Also quoted by Tybjerg, p. 15.
[142] 'La digitalizzazione […] trasforma una variazione continua (la modulazione del suono oppure la scala tonale della fotografia) in una serie discreta di valori.' Mazzanti and Farinelli, pp. 1164-5.

frame, such as snow, the sparkle of a jewel, or lightning', but also small images of birds in the sky which are read by the computer as grains of dust.[143] In addition, today there is no ageing test to determine the lifespan of the digital carriers and the hardware, and software technology is changing continuously and very quickly. This could pose serious problems for film preservation. To confront the problem of the instability of digital support, a possible solution could be the so-called 'continual migration' of data, 'cyclically transferring (every two to five years) all the data to a new support'.[144]

To summarize, the promise of eternity seems unlikely to be fulfilled just yet. Digital technology can, however, be very useful in eliminating some defects of the original materials, for example flickering or instability of the image in early silent films, but whether this could be really defined as restoration is a controversial matter. As Cherchi Usai asks: 'is image enhancement a form of restoration? Do restorers have the right to make an image look better than it was originally?'[145] The fact that one of the ontological properties of film is its being designed to be reproduced in many copies theoretically justifies film restoration, which produces, in a basic sense, nothing more than a copy of the original. However, the copying process in film restoration is never neutral because the restorer actively intervenes on the film, an operation which poses the ethical issue of how much to modify and whether to 'improve' the appearance of the film itself. This decision-making process requires specific competences (technical, historical, philological and artistic) first and foremost in order to establish which version of any given film should be restored, and secondly to establish the use of a specific technology to duplicate the original materials. After critically comparing and verifying all the available data and materials, it is crucial to file accurate documentation on the restoration (recording not only the actions and interventions performed, but also the

[143] Giovanna Fossati, 'From Grain to Pixels: Digital Technology and the Film Archive', in *Restoration, Preservation and Destruction of Films*, ed. by Comencini and Pavesi, pp. 128-42 (p. 135).
[144] Ibid., p. 141.
[145] Cherchi Usai, *Silent Cinema*, p. 60.

motivation and arguments behind the decisions taken), in order to meet the demand of reversibility for further interventions that may be made in the future. It is only through these efforts that an irrecoverable ‘loss of memory’ may at least in part be prevented.

1.4 Use of terms

'Nomina sunt consequentia rerum'
Justinian, *Institutiones*, II, 7, 3

The various terms that have been used in the preceding section to introduce the object of the present research – preservation, conservation and restoration – are all employed by film archivists and restorers in their everyday work. However, these terms are commonly used not only by experts but also by the audience, in the broad sense of 'people for whom a heritage object is meaningful'.[146] The term *restored* often conveys the idea (to some audiences) that the old film, after a special and magical operation performed upon it, is now brand new, free from defects and from signs of the passage of time.

The issue is further complicated by the fact that these terms are cross-disciplinary, that is to say they are used in all the different fields in which archivists and restorers have discussed issues linked to restoration: architecture, history of art, textual criticism.[147] Thus, this chapter does not represent an attempt to build a new lexicon, but aims rather to describe the existing frame of reference of these words in film restoration and to discuss some problems and ambiguities. In addition, a tentative comparison between film and other fields of art restoration is provided as a means of gaining insight into the present use of the terminology at issue and offering some considerations on the actual practice of restoration.

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[146] Muñoz Viñas, *Contemporary Theory of Conservation*, pp. 160-1.

[147] It is true that there is another field of restoration dealing with artefacts (e.g. vases, armour, jewellery, antique furniture, and even clothes, military uniforms etc.). It would seem that visual arts such as painting and sculpture and architecture offer the closest parallel to the present research topic and thus I will dwell on these in this chapter.

The issue is not only terminological. The use of these different terms reflects the theoretical perspective of people involved in a work of preservation and, as a consequence, their particular *modus operandi*. However, a preliminary etymological and historical review of the terms restoration, conservation, and preservation will serve to introduce more complex issues.

The term *restoration* is widely used in many fields and even in everyday situations, and its meaning can therefore be elusive. Stephan Tschudi-Madsen outlines the origins of this word, starting from the Indo-European root *st(h)ã*, meaning 'stand, place oneself'.[148] By inserting the sounds 'u/v' and then 'r', he demonstrates that the words σταβρος (*stavros*) and *staurr*, respectively from ancient Greek and Old Norse, mean 'pale, pole'. In Latin, the same stem seems to be enclosed in the word *re-staurare*, where the prefix *re* gives a different meaning to the word ∗*staurare* ('strengthen, make fast'), where the Indo-European stem is clearly recognizable. Given that the ancient Romans used poles to defend their fortifications, the meaning seems to be 'to re-strengthen with poles', very close to the term 'to repair', whose Latin stem is *re-parare,* meaning to prepare anew. According to the source quoted by Tschudi-Madsen, *Queen Anna's New World of Words* (1611), the word could have two different meanings: 'to repair, to make whole again' but also 'to comfort, satisfie, to recompence', which explains the evangelical inscription placed by Boulanger in 1765 above the entrance of his eating house in Paris: *Venite ad me omnes qui stomacho laboratis, et ego vos restaurabo* (Come to me all who suffer in the stomach and I will restore you). As is well known, the episode seems to have generated the word 'restaurant'.

[148] To retrace the etymon of the word 'restoration' I have extensively used the work of Stephan Tschudi-Madsen, *Restoration and Anti-Restoration: A Study in English Restoration Philosophy* (Oslo: Universitetsforlaget, 1976).

Interestingly enough, with the Enlightenment and the growing interest in ancient monuments,[149] the term became increasingly linked to the work of repairing, replacing 'in a former state, to give back what has been lost or taken away'.[150] James Murray's *Oxford English Dictionary* (Volume R, published 1903-05)[151] reflects the same meaning of 'to build up again, to bring back to original state' and seems especially linked to the restoration of architecture and works of art. In fact, in the nineteenth century the fierce discussion in this field between the French 'stylistic' (Viollet-le-Duc) and the English 'Romantic' way of thinking made a great contribution to the dawning modern theory of restoration.

When compared with *restoration*, the terms *conservation* and *preservation* present a less complex etymology. Both seem to derive from the same Latin verb *servare* that means 'to save', though the prefixes are different: the first – *cum* – 'by means of', seems to refer to the act of saving something and suggests the idea of continuous reinforcement, while the second – *prae* – 'before', may be related to the act of protecting what is to be saved, anticipating damage.

The three terms briefly described have been commonly used with slight differences in meaning in various fields of arts and translated from/into different languages. Thus, Melucco Vaccaro justifies the juxtaposition of the two terms *conservation*/*restoration* as 'an attempt at recovering the sense of a historic tradition, at gathering together the best from the two movements that were so ferociously opposed to one another in the nineteenth century'.[152] Although the ambiguity might be a way of avoiding the problem of distinguishing between the terms, this juxtaposition has the advantage of underscoring the link between different procedures that ensure the

[149] In 1794 the French National Convention issued a decree claiming the importance of conserving all the objects useful for art, science and education. Cf. Paul Léon, *La Vie des monuments français; destruction, restauration* (Paris: Picard, 1951), pp. 63-4, quoted in Giovanni Carbonara, *Avvicinamento al restauro; teoria, storia, monumenti* (Naples: Liguori, 1997), p. 81.
[150] Samuel Johnson, *Dictionary of the English Language*, 1755, quoted by Tschudi-Madsen, p. 15.
[151] Ibid.
[152] Alessandra Melucco Vaccaro, 'Reintegration of Losses', in *Historical and Philosophical Issues*, ed. by Stanley Price, Talley Jr., Melucco Vaccaro, pp. 326-31 (p. 327).

continual survival of cultural heritage. Numerous other distinctions can be made, as recent work has shown, in particular that of Muñoz Viñas, Price, Pevsner and Mazzanti, who will be dealt with further on in this section.

In addition, other terms like ‘work of art’ and ‘object’ seem to pose further difficulties. This stems from the fact that a work of art is also often an object designed for a specific use, even before being an artefact. This is probably why in the last few years scholars have introduced another term: ‘cultural heritage’ (‘bene culturale’ in Italian, ‘patrimoine’ in French). On the one hand, such a term can be useful to convey both the artistic and economic nature of a cultural object. On the other hand, ‘heritage’ (like ‘bene’ or ‘eredità’ in Italian) suggests the idea that what is preserved (film, painting, monument) must have material value as well as the ability to create revenue and not simply exist for non-material reasons.

The double nature of the film both as an industrial product and as a potential work of art has been discussed in 1.3 above. A film can be defined as an object because of its material nature (mostly made of plastic) and as a complex text made up of different copies (versions and editions), each of them worthy of being preserved from decay as a historical testimony of its time. What must be emphasised is that a film must undergo the mechanical stress caused by a projector if the audience wants to enjoy it, since it is not possible to watch a film in the same way as one would admire a classical bust in a museum display cabinet. In fact, it is more appropriate to compare a film to an ancient building that still serves functional ends, and has withstood the effect of time. In addition, a film has the double nature of an aesthetic entity and a historical document. Thus, in this perspective it is not important to consider what is preserved, but *how* it is preserved. The use of the terms can help to better understand the principles of the ethics of restoration in different fields.

Today, experts in conservation (architects, conservators, art historians, archaeologists, scientists) tend to use the term *restoration* with caution and it has progressively been disappearing from manuals and critical writing. This has occurred especially in the fields of what are traditionally considered fine arts: painting and sculpture. A good example of this trend is the change of the title of a paper given by Paul Philippot on 'Restoration: Philosophy, Criteria, Guidelines' at the 1972 Williamsburg conference. 'The author's term *restoration* was changed to *historic preservation* for publication of the paper in the United States. In the revised (1994) Code of Ethics and Guidelines for Practice of the American Institute for Conservation of Historic and Artistics Works (AIC), the word *restoration* is not used at all.'[153]

Also, Muñoz Viñas entitles his seminal reflection on the ethics and methodology of restoration work *Contemporary Theory of Conservation*, highlighting the term *conservation*. He discusses the use of the other terms as well: he distinguishes a narrow sense of the meaning of *conservation* (opposed to *restoration*), as an activity of keeping, and a broader sense as an activity that includes *restoration* and other possibly related activities. Thus, he chooses to use the term *conservation* to refer only to conservation in the broad sense and *preservation* in the narrow sense.

However, the term *conservation* in English seems to encompass what is meant in the Romance languages by the equivalents of the term *restoration* (*restauro* in Italian, *restauration* in French and *restauración* in Spanish), whereas *restoration* in North America apparently conveys a 'more restricted sense, usually denoting an intervention aimed at integrating the losses in a work of art or at re-creating a period style'.[154] Moreover, the AIC uses the term *stabilization* as an alternative to *preservation*.[155]

The English term *conservation* conveys a broader meaning compared to the corresponding French and Italian terms, and the English usage is now prevailing over

[153] Nicholas Stanley Price, 'Preface', in *Historical and Philosophical Issues*, pp. x-xvii (p. xvi).
[154] Ibid., p. xiii.
[155] Muñoz Viñas, p. 15.

the others. The increasing use of the broader sense of the term is probably the reason why scholars and experts are now often using *conservation* also in the Romance language area (*conservazione* in Italian, *conservation* in French) as an alternative to *restoration*. In the preface to *Historical and Philosophical Issues in the Conservation of Cultural Heritage*, Stanley Price explains the use of these terms: he adopts *conservation* as a word indicating a modern practice, while *restoration* is used for earlier practices.

In the field of architecture Nikolaus Pevsner put forward an interesting proposal regarding the meaning of *preservation* and *conservation*, where the former could deal with individual buildings, the latter with all areas. This idea probably derives from the concept of *integrated conservation* that emerged, on 26 September 1975, in Amsterdam, at a committee meeting of the Ministers of the European Council for the approval of the European Charter of Architectural Heritage. According to this, it is important to preserve not only single monuments, but also their environments. Significantly, in his foreword to Tschudi-Madsen's book, Pevsner does not use the term *restoration* at all, though the subtitle of the book he is introducing is 'a study in English restoration philosophy'.[156] This is probably due to the historical perspective of the research in which Tschudi-Madsen retraces the contrast which arose in the nineteenth century between restorers and the 'Anti-Scrape Society', involving 'restoring versus preservation, and *l'unité de style* versus stylistic diversity.'[157] Thus, Tschudi-Madsen gives the term *restoration* an old-fashioned aura, in contrast with the more modern use of *preservation* and *conservation*.

In architectural preservation, Carbonara links the use of the apparently opposed terms *restoration* and *conservation* to Brandi's theory of restoration.[158] If *restoration* seems to indicate the intent of re-creating the object (of art?) and removing what is

[156] Nikolaus Pevsner, 'Foreword', in Tschudi-Madsen, p. 7.
[157] Ibid., p. 19.
[158] Carbonara, *Avvicinamento al restauro*, pp. 42-3.

considered 'wrong' from it, *conservation* would appear to be a more scientific term, since it suggests the scrupulous protection of the material integrity of the work of art. Thus, when one uses the first term, attention is more focused on 'restoration with regard to the aesthetic case', while when one uses the second it is on restoration 'with regard to the historical case'.[159]

Indeed, the English term *restoration* still carries a negative connotation because of its associations with stylistic restoration as theorized by Viollet-le-Duc. Instead, *conservation* sounds like an updated definition of r*estoration* beyond what Brandi defines as 'preventive restoration'.[160]

However, the same terms are still broadly used in the field of architectural restoration even though they hide two different schools of thought: the first, a 'purist' school, moves against the principles of 'critical restoration' aimed at 're-integrating the image', filling in the lacunae and removing what is considered extraneous to the original, whereas the second school of thought supports these principles. Thus, Marconi, closer to the latter school, distinguishes two kinds of interventions on monuments: 'small' restoration, limited to the maintenance of architectural work, and 'large' restoration, focused on recovering the original aspect of the work.[161] Carbonara underlines the importance of maintenance, linking it to the very survival of a monument. For example, the Pantheon is now in good condition because people have continued to use it, changing its function: from a temple to a church. There are other Roman buildings that have not lasted so well even though they were built later: for example the *calidarium* in the Baths of Caracalla, now in ruins. Thus, maintenance is part of the re-use process that can *conserve* an architectural work, allowing restorers to

[159] Brandi, *Theory of Restoration*, pp. 65-75.
[160] Ibid., p. 79.
[161] Paolo Marconi, *Dal piccolo al grande restauro. Colore, struttura, architettura* (Venice: Marsilio, 1998).

avoid further interventions (*restoration*), regarded by Carbonara as 'surgery treatments' rather than 'preventive care'.[162]

In film the use of these terms seems to be more problematic than in other fields of restoration. In fact, Mazzanti deplores the fact that there is not 'a secure, common lexis', adding that 'as restoration is not defined, neither are the terms that support it, nor the activities in which it consists.'[163] He polemically uses inverted commas for 'restoration', defining it 'as a shapeless conglomerate of meanings which are often mutually contradictory'.[164] This seems to be related to the lack of a theory, a procedure and a methodology of film restoration, since the FIAF has clearly stated only the conditions of the physical conservation for films, but it has not prescribed procedures for restoration or for reconstruction.[165]

Interestingly, when he comes to define the term *restoration* in competition with *preservation*, he highlights the difference between the former and *reconstruction*, but he virtually ignores the term *conservation*. Thus, it is possible to infer that Mazzanti establishes a sort of hierarchy in which *conservation* is the less important, passive activity, whose aim is to keep the existing material in the best possible state (basically a matter of controlling storage conditions). *Preservation* is, by contrast, a form of 'active conservation', namely the 'act of duplication, carried out without making changes (for example editorial changes) to the original material'.[166] Despite the term, which seems to suggest a transparent transmission of data, the idea that this activity is neutral is disputable, considering the large amount of choices experts have to face (e.g. the duplication of the tinted, toned or stencilled original silent coloured films through modern film stocks and printers: see the discussion of the restoration of the colours of

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[162] See p. 13.
[163] Mazzanti, p. 23.
[164] Ibid., p. 23.
[165] Enno Patalas, 'Conservare, restaurare, mostrare: pratiche di salvaguardia del cinema muto', *Comunicazione di massa*, 6 (1985), 42. Cf. FIAF, *Manuel des Archives du Film*, FIAF, Brussels, 1980.
[166] Patalas, 'Conservare, restaurare, mostrare', p. 30.

The Last Days of Pompei, described in 2.3). *Restoration* is a more decisive step and it is related to the act of recovering the original characteristics of the film through the most appropriate available (or reconstructed) techniques, eliminating damage and defects from the images. *Reconstruction* is, on the other hand, an editorial intervention whose aim is to bring the film back to its original narrative structure (as an example of this procedure, see the work on *Cabiria* described in 2.4 below). Moreover, while *restoration* is an intervention on the material, optical form of the film, *reconstruction* is an intervention of a textual kind on its narrative structure.

It is worth adding that the restoration and reconstruction of a film are activities that seem more related to the so-called 'New Philology' of Michele Barbi, Giorgio Pasquali and Pio Rajna than to the classical textual criticism of Karl Lachmann. Lachmann considered a text as a *fact*, whereas the New Philology considers it as an *act*, and focuses on textual variants of literary works. Given that a film, especially a silent film, is a very complex work that can present many variants, restorers are more interested in the history of a film's reception and in the recovery of one of the forms of it that once existed.[167] As a consequence, the best approach may be that of a dynamic philology instead of a static one.

Significantly, Read and Meyer and the Gamma Group called their seminal study *Restoration of Motion Picture Film*. They focus at the very beginning on the question of terminology, stating that *conservation* and *preservation* are terms related to the activity '[of stretching] the lifetime of a film as much as possible'. It should be noted that the terms are often used interchangeably, in a passive (storage) or an active (duplication) sense. FIAF in fact distinguishes two kinds of preservation: *passive preservation*, which basically means storage, and *active preservation*, which includes temperature control and ensuring relative humidity in storage rooms, as well as examining, ordering, filing

[167] Cf. Michele Canosa, 'Per una teoria del restauro cinematografico', in *Storia del cinema mondiale,* V, 1069-118 (p. 1116).

and *conserving* film material in archives.[168] Thus, the meaning of *preservation* here embraces *conservation*, since both activities are aimed at keeping the film material safe, slowing physical-chemical decay processes, and extending its lifetime. The FIAF manual draws another fine distinction between *technical restoration* and *restoration per se*: the first consists of the practice of duplicating film material (e.g. repairing splices and perforations, duplicating the original shrunken nitrate prints) on safety film stock before further intervention on the visual and sound content.

Actually, Read and Meyer go beyond this distinction when they differentiate between *restoration* and *reconstruction*: both deal with 'manipulating' processes that create a gap, a significant difference, 'between the materials you start with and the materials you end with'.[169] Since intervention on a film that has undergone a process of decay implies a procedure of duplication, the core of the work is essentially the transfer of information from one carrier to another. In line with Mazzanti's view, Read and Meyer underline that a standardized duplication is impossible, since it implies expert technical decisions that affect the result of the work itself. This is why the term *preservation*, if associated with this meaning (transparent, neutral, standard duplication), is not really appropriate and can be confusing when related to film restoration.

Given that there is a great deal of confusion in the field of film restoration over other technical terms as well, in a commendable effort of clarity Read and Meyer add a glossary at the end of their book. Here it is possible to abstract a further meaning of *preservation* that is linked to the word 'accessibility'.[170] In fact, this seems to be the first goal of film archivists and it sets their work apart from that of restorers of pictures, statues and monuments. If not duplicated onto another carrier (hopefully a modern film

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[168] *Préservation des films et du son*, ed. by Henning Schou (Brussels: FIAF, 1986), quoted in Canosa, 'Per una teoria del restauro cinematografico', p. 1072.
[169] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 1.
[170] 'The practices necessary to ensure permanent accessibility to the image content of the film.' In Ibid., p. 333.

stock) a film cannot be shown, while even a very badly preserved painting or sculpture or a disassembled and ruined monument can be seen and appreciated in some way. This is probably why Mazzanti and Farinelli, after examining the drawbacks both of an optical and contact duplication of a film, and after outlining the decisions a film restorer has to make, propose to combine the terms *restoration* and *preservation*.[171] Thus, they use the term *restoration* to include all the work that can be traditionally defined as *preservation*.

Venturini examines the use of these terms in different authors, mostly Italian. He dismisses the importance of the term *conservation* (as the 'zero' level of the same process), and the term *recreation*, as the imaginary reconstruction of a film if some parts are still in existence, even through the use of non-film material (e.g. assembled stills). [172] He then compares the definition of *preservation* by Mazzanti and Cherchi Usai. As mentioned above, Mazzanti means by it 'active conservation', whereas Cherchi Usai gives it a broader meaning, one that includes all the procedures of duplication, restoration, conservation, reconstruction (when necessary), access and showing.[173] The latter usage may derive from the influence of English, where the word *preservation* seems to have a wider range of meanings, embracing both the activity of maintenance (keeping the films safe) and restoration (recovery of the aesthetic content). In addition, Cherchi Usai, proposing a more flexible approach to the use of these terms, stresses that the aim of restoring should be to show the film to the audience, as Nissen claims in *Preserve then Show*.[174] Actually, for economic reasons, work in film archives is quite often focused only on the production of duplication material (e.g. internegatives) that may constitute a step prior to restoration after obtaining financial

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[171] Mazzanti and Farinelli, p. 1123.
[172] Simone Venturini, 'Il restauro cinematografico, storia moderna', in *Il restauro cinematografico: principi, teorie, metodi*, ed by Simone Venturini (Pasian di Prato: Campanotto, 2006), pp. 13-52 (pp. 40-1).
[173] Cherchi Usai, 'La cineteca di Babele', p. 1039.
[174] Nissen, 'Introduction', in *Preserve Then Show*, pp. 9-12 (p. 9).

support. On the other hand, when the aim is to produce both a copy to be shown and another to be preserved, the Italian term indicating the former is usually *copia di circuitazione*, whereas a *preservation* copy (*copia di preservazione*) means the print that has to be kept safe and not shown.[175]

Wallmüller takes a step forward in delimiting the meaning of the key terms (*conservation*, *duplication*, *restoration*, *preservation*). Analysing the criteria for the use of digital technology in moving image restoration, she discusses specific terminology. First of all, taking into account the work of Canosa, Farinelli and Mazzanti,[176] she describes three different causes of intervention due to the physical condition of moving image material and adds the translation of the relevant terms into Italian, French, Spanish, Portuguese and German: *damage* (concerning physical conditions like 'traces of age, decay, use or misuse of the material, such as scratches, tears, fingerprints, stains, shrinkage, and loss of colour') and *change* (a term suggested by Canosa and indicating a chemical decay), *error* ('made during copying processes, such as visible framelines, flickering, unsteadiness, as well as editing errors such as inverted shots, or cuts made by censors') and *defect* ('any imperfection deriving […] from technical limitations during the time of production').[177]

Whether flickering and unsteadiness can be considered errors or defects for early silent films, when production companies made film perforations on their own, is open to debate. However, the distinction between *damage*, *error* and *defect* helps to clarify the meaning of the key terms, since Wallmüller links them to the factual intervention of restorers. While *damage* and *error* refer to the handling of films after production, *defects* are related to the original imperfections of production and 'have to be regarded as an integral part of the original work.'

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[175] Author's interview with Alberto Barbera, Bologna, 4 July 2006.
[176] Mazzanti and Farinelli, pp. 1119-74, and Canosa, 'Per una teoria del restauro cinematografico', pp. 1069-1118.
[177] Wallmüller, p. 79.

As a consequence, '*restoration* should reduce or remove *damage* and *errors*, while preserving *defects* inherent in the work at the time of production as part of its individual characteristics.'[178] Here it seems that the passive act of preserving (defects) is opposed to the active one of restoring (removing damages and errors). On the other hand, quoting Edmondson, Wallmüller gives a definition of *preservation* that is very close to Cherchi Usai's and embraces the meaning of all the other terms (*duplication*, *restoration* and *reconstruction*), implying a very active intervention: it ensures not only the *conservation* of the original material, but its 'permanent accessibility'.[179]

It is worth underlining that this definition takes into account the *General Guidelines to Safeguard Documentary Heritage* where the emphasis is on cultural objects, not only works of art, and the term *restoration* is not even mentioned.[180] Thus, from the use of the term 'film preservation' it is possible to infer that, regardless of its double nature both as a commercially exploitable good and as a work of potential artistic value, a film can always be intended as a cultural object to be shown to the public. Ultimately, the aim of preserving films is to make them available to an audience, namely to make or keep them 'projectable'.

To return to the term *preservation*, it is inappropriate to define it as a passive step opposed to the active one of restoration, even if it is intended as the act of retaining defects in a duplication process of the film to be restored. Since it involves important decisions in duplicating film material, it is a crucial moment and a very active step in the larger process of saving the object and the appearance of a film. In this sense, it is impossible to distinguish preservation from restoration and the use of these terms, often inaccurately translated from one language to another and differently interpreted in the literature, still creates confusion.

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[178] Ibid., p. 79.
[179] Ray Edmondson, *Audiovisual Archiving: Philosophy and Principles* (Paris: UNESCO, 2004).
[180] Ray Edmondson, *Memory of the World; General Guidelines to safeguard Documentary Heritage* (Paris: UNESCO, 2002), p.12.

Instead, an essential and more fruitful distinction could be made between analogue and digital techniques. In the last few years digital technology has been increasingly used in film restoration, becoming a sort of alternative to the analogue procedures of restoration, giving both an aura of mystery and perfection to this work. On the one hand many archivists and experts have seen the use of the digital tool as a mysterious object and they have viewed it with suspicion. On the other hand cinemagoers have taken it to be the best possible technology to gain access to the work. It is not so important to distinguish here the differences of intervention through different means, but rather to try to assess the use of different terms.

In this case *digital*, when associated with *restoration*, can mean that restorers apply some digital technique in the process of restoring. When associated with *preservation*, on the other hand, digital mostly indicates a process of duplication aimed at producing a new object (e.g. a DVD) in order to give access to the image, showing a film without damaging the original material. A number of film companies, however, have mistakenly used the term *digital restoration* for commercial reasons to attract audiences. They have presented as 'digital restorations' many simple transfers of films originally produced and printed on film stock onto a digital medium (i.e. through digitization). In this case there is no guarantee that such a work has complied with the ethics of restoration. For instance, the choice of the scanning parameters (resolution, bit depth, aspect ratio) that Wallmüller defines as 'crucial' could be inaccurate, given that the aim is merely the exploitation of a film as a product.[181]

However, even if experts carry out the work by the rulebook, fulfilling ethical requirements, it would be possible to define the film as *restored* only when the final product is a print on a film stock. Otherwise it would be better to use another term, such as *reformatting*, in order to underline that a change in format has occurred. Wallmüller

[181] Wallmüller, p. 84.

suggests that a distinction should be made between *digital restoration* and *digital film restoration*. The first term indicates that restorers 'apply digital technology to moving image material while respecting the concept of restoration and the theoretical criteria'. The second term can be used only when the aim is a 'projectable film'.[182] In fact, one might even go so far as to say that the transfer of a printed film to a digital support might resemble what Umberto Eco calls 'intersemiotic translation or transmutation', namely a 'reformulation in other semiotic systems'.[183]

The appearance of a film – the image that the work of art delivers to the audience – can be fully appreciated only in projection. This is probably why Canosa claims that 'only in projection will the restoration come to completion'.[184] Indeed, it seems that this can be true only if *restored* films are still traditionally printed on film stock, otherwise they would be another kind of artwork, as if a genetic mutation had changed their nature and perhaps also their appearance.

As a matter of fact, economic interests force production companies to present as *restored* copies those that are only *repurposed*, which means not that they have been converted from one format to another, but also that they are a sort of new creation through the use of digital means. Interestingly, Brad Reinke, Cinesite Manager of Digital Restoration Service, claims that the evolution of digital technology is making film restoration increasingly practical. To this end Cinesite is developing software tools, which automate labor-intensive processes for repairing scratches and removing dirt from films.[185]

Theoretically, the objective of Cinesite is 'to *restore* the film to the state of original projection'. However, the term *restoration* indicates, in this case, a simple 'step

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[182] Ibid., p. 88.
[183] Umberto Eco, *Mouse or Rat? Translation as Negotiation* (London: Phoenix, 2003), p. 131.
[184] Canosa, 'Per una teoria del restauro cinematografico', p. 1082.
[185] Cinesite handled the restoration of the classic Walt Disney feature *Snow White and the Seven Dwarfs* (1937) when the Kodak subsidiary opened for business in 1992. Fossati, 'From Grain to Pixels', pp. 128-42.

up' from *preservation* to *repurposing*. While the former means basically stopping the deterioration of an element, the latter is a form of *re-creation*. In the case of two or three missing frames, for instance, it is possible to recreate these frames by making an assessment of motion and light between the existing frames. 'That is something than can't be done photochemically'. However, despite all the advances in digital technology, Reinke points out that black and white separation masters are still the best archival media.[186]

The use of terms such as *conservation*, *preservation* and *restoration* thus differs somewhat according to the field of application (painting, architecture, cinema) and to the language one is using. Fig. 1.3 represents these differences, and draws attention to the broader use of *preservation* compared to *conservation* in cinema, while in other fields (paintings, architecture) it is the opposite.

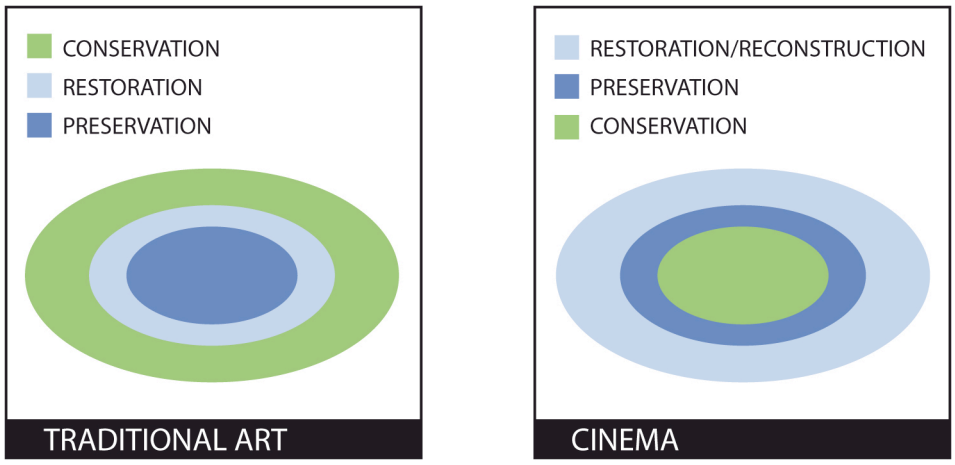

Fig. 1.3 Schematic representation of the use of specialized terms in different fields (Author's drawing)

In addition, in cinema the term *restoration* is still more frequently used without being clearly distinguished from *preservation*. Perhaps this could be related both to a more recent conception of film as art compared to other traditional forms of art and to the need to make an old film visible again (accessibility).

[186] <http://www.cinesite.com/> [accessed 30 August 2010].

There is also another issue to be taken into account: most cinemagoers are not aware of historical and aesthetic issues. They wish to watch a film as if it were new, regardless of the time in which it was produced. They expect a *restored* film to be without defects, exactly like a film that has just been produced and shown. In fact, the practice of film restoration implies a more active intervention than for traditional works of art. Thus, it would be more appropriate to consider *re-creation*, as different from the original material, since the final product – the *restored film* – is physically another object.

Without going further into the comparison of terms in the field of film restoration, it is possible at this point to outline some provisional conclusions. Although the work of *preservation* implies an intervention that necessarily modifies the original material (e.g. redoing splices, fixing the perforations, adjusting the frame line, cutting ruined frames, transferring the image onto another carrier), and deals with the key concepts of restoration (handling of the original, selection of original material, reversibility of treatments), the further steps – *restoration* and *reconstruction* – are more active interventions. In the former (restoration), restorers can use more advanced techniques (e.g. Desmet method) to recover essential characteristics of the original material (contrast, colour), while in the latter (reconstruction) they can use these techniques to reconstruct the narrative structure of a specific version to restore.

It is necessary to stress that in this field the aim should be to obtain a *restored* (or *re-created*) print on a film stock. If the final result is another kind of object (e.g. a digital master), it should be described as being *reformatted*, emphasizing the act of migration of data together with the work of restoration.

In addition, *preservation* and *restoration*, although linked in an indirect way, are terms that convey different ideas: the first implies the idea of maintaining something coming from the past, while the second suggests the idea of making something new for

the future. Thus, in the field of cinema, where – according to Benjamin – art has lost its aura since it is mechanically reproducible, the term *restoration* may be more acceptable and it is certainly more popular.

2 Four case studies

> Restoring a film often resembles the long ride in a classical western movie. You start with a well-defined aim: bringing the bandit to the prison beyond the desert, or bringing a film back to its 'original version'. But then you begin to like your prisoner, in spite or even because of his defects.
>
> Enno Patalas[1]

In this chapter I present studies of four different cases of film restoration. My main purpose in doing so is to provide a set of detailed concrete examples which can help give an empirical grounding and focus to the historical and theoretical discussion in the rest of the thesis. I selected these four restorations because together they exemplify the most important problems with which film restorers must deal. The first case study, of *L'Errante*, addresses the problem of correctly identifying the film: the first step that can lead a restorer to take the decision to intervene. This case raises the question of the so-called 'orphan film', one without a clear identification and attribution. It also addresses the issue of reproducing original colours by emulating the original techniques of tinting and toning. The second case study, of *Maddalena Ferat*, is more focused on the problem of gaps, or lacunae, in a film and whether/how to fill them. It also poses an important question about presentation of the restored film: whether it should aim to make the film look just as it might have done to a contemporary audience, or whether it should clean it up, for instance by eliminating visual 'noise' (scratches, juddering) that a modern audience would not tolerate or would see as 'mistakes'. The third study, of the *Last Days of Pompei*, is also focused on lacunae – in this case missing colours – and how to compensate for them, especially when a more complex technique is involved (namely stencil), as well as with some issues of philological reconstruction. This case deals with the restorers' aim to project the film in public as major spectacle and their

[1] Patalas, 'On "Wild" Film Restoration', p. 38.

decision not to attempt to trace a possible original score. The last case study, of *Cabiria*, encompasses most of the preceding theoretical and practical questions but deals with a more recent work of re-restoration that had a twofold goal: that of reconstructing both the lost silent version of 1914 and the sound version made by the director in 1931. The latter reconstruction used the original audio sources that had been preserved on a now obsolete technological support.

2.1 *L'Errante*: Problems in the Identification and Restoration of an 'Orphan Film'

2.1.1 An 'orphan film': what are restorers working on?

This case study poses very clearly the first question a restorer needs to address: what am I working on? So-called 'orphan films' – those without credits and copyright holders who ask for its conservation/commercial exploitation – usually do not attract the attention of archival curators to preserve them in order of priority. Their 'orphan' condition jeopardizes their survival.

A film with the French title *L'Errante* was given to the Cineteca Nazionale (CN-Rome) by the Centre National de la Cinématographie (CNC - Bois d'Arcy - Paris) in 2001, in accordance with the exchange arrangements of the FIAF. This exchange was one of the conditions of a partnership created among the FIAF film archives in order to implement a common policy of collecting and taking care of national films. The copy sent to the CN reportedly was the only one in existence. It was a nitrate base film, tinted in different colours, with French intertitles and no credits at the beginning or at the end, apart from the main title: *L'Errante – drame*.

The first task of Italian curators was to try to identify the film.[2] The record sent to the CN by the Archives du Film of the CNC listed Baldassarre Negroni as the director and Linda Pini as the protagonist. The Italian title appeared to have been *(La) Danzatrice russa*, a film produced and released in 1922, whereas in France it was released three years later. The only known trace of this work was in an article of 1925 in a French film magazine, in which Linda Pini was quoted as the protagonist and a summary of the plot was included together with a brief critical review.[3] Another source was the novel *L'Errante*, written by Pierre Desclaux and published in 1926 in *Mon Ciné* in ten instalments, together with still frames taken from the film.[4]

Michelle Aubert, curator of the Archives du Film in Bois d'Arcy, believed that the film had been adapted from this French novel and she noted that the writer had been registered in France as an adaptor and author in a cinema registry of the 1920s. However, it might also be possible that Desclaux wrote this serialized story *after* the release of the film, reusing the original screenplay and adapting it to a literary work. In fact, in each instalment of *Mon Ciné* there is a frame in which is reported: 'L'ERRANTE, Roman par Pierre Desclaux *d'après le film* des Etablissements Georges Petit'. The fact that publication of the novel *L'Errante* came after the film's release in France and the reference to Etablissements Georges Petit, a distributor of foreign films, both seemed to confirm that this was a foreign film.[5] Apart from these pieces of information, however, no other formal documentation has been found. There were neither traces of censorship approval nor records of its release in Italy.

Four factors can be considered crucial in identifying the film: the identification of the lead actor; a study of the filmography of this actor and the putative director; the

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[2] This section of the thesis was written in 2008. Just as I was completing the revision of the thesis in August 2010 I was informed by Irela Nuñez and Maria Assunta Pimpinelli at the Cineteca Nazionale that they had positively identified the film. I discuss their conclusions at the end of this case study.
[3] H.A. (sic), 'L'Errante', *Hebdo-Film*, 51, 10 December 1925, p. 25.
[4] *Mon Ciné*, nos 212-221, 11 March-13 May 1926.
[5] Michelle Aubert (curator of CNC) personal written correspondence: letter to Mario Musumeci, 5 April 2003.

examination of other films with a similar title; finally, critical analysis of the intertitles and film edge data.

The initial findings suggested that the principal character was played by Linda Pini (stage name of Gerlinda Filippini). However, since there were no production records, the only evidence available came from the comparison of some pictures or still frames of Linda Pini with images of the protagonist of *L'Errante*. The research in the Department of Pictures and Posters at the CN yielded only three pictures of Linda Pini. The best one seemed to be a picture from *La freccia nel cuore* (dir. Amleto Palermi, 1924). This film was shot in almost the same period as *L'Errante*, and Linda Pini played a similar role. A comparison with some still frames of the film *L'Errante* has suggested that the protagonist of this film could be Linda Pini.

Fig. 2.1 Linda Pini in *La freccia nel cuore* (1924), directed by Amleto Palermi. Still from the CN Photo archive

Fig. 1.2 The protagonist of *L'Errante* (*La danzatrice russa*? 1922*)*. Frame enlargement

Interestingly, the most recent publications do not corroborate this conclusion. A recent general catalogue of Italian actors does not list this film in Linda Pini's works.[6] The last mention of this film is in her biofilmography and in Baldassarre Negroni's (he was supposed to be the director of *La danzatrice russa* (1922), and was not reported in subsequent editions.[7] By comparing other films in which Linda Pini acted in the same period with *L'Errante* it becomes evident that there are many similarities between the storyline of *L'Errante* and those of other films starring Linda Pini: the plots usually involve poor girls ready to sacrifice everything for their children and their lovers (*Elevazione*, 1920; *I disonesti*, 1922; *La freccia nel cuore*, 1924; *La via del dolore*, 1924); young women whose pure feelings are threatened by wicked people (*Favilla*,

[6] Enrico Lancia and Roberto Poppi, *Le attrici* (Rome: Gremese, 2003), pp. 288-9.
[7] *Film Lexicon degli autori e delle opere,* 10 vols, ed. by Michele Lacalamita and Fernaldo di Giammatteo (Rome: Bianco e Nero, 1962), V, p. 638.

1921); or young women who have to fight against crime to win back their purity (*I dannati*, 1921; *La madonna errante*, 1921). The success of Linda Pini seems to be linked to her passionate performances as a woman in trouble in the films mentioned above, which would suggest that the role in *L'Errante* was perfect for her.

It is more difficult is to establish whether or not Baldassarre Negroni directed this film. The most recent attribution of this film to him is in a bio-filmography edited by Roberto Chiti and published nearly fifty years ago.[8] It lists 1922 as the year of production of the film and Linda Pini as the lead actor. What seems odd is that for many years Count Baldassarre Negroni was married to another actor, Olga Mambelli, whose stage name was Hesperia, and he almost always worked with her. Thus it is not clear why he apparently made an exception in this case. For this reason even Vittorio Martinelli, one of the leading experts on Italian silent films, categorically excluded that Negroni could have worked with Linda Pini in that period.[9]

In the attempt to find another copy of *L'Errante*, I examined other films with a similar title but this did not produce any positive results. My hypothesis here was that another copy of the same film may have been catalogued with a similar title by mistake. Interestingly, there exists another film with an Italian title that echoes the French title: *La Madonna errante*, directed by Gaston Ravel, produced by Medusa-film and released in Rome in 1921, in which Linda Pini is the main character. Unfortunately, apart from some similarities to the plot of *L'Errante* (there is a practically identical scene in which the protagonist involuntarily kills a man and her lifestyle subsequently changes, for the better in the *Madonna errante*, for the worse in *L'Errante*), the slightly different titles refer to two different films.

Another film whose Italian title was *L'Errante*, directed by Jacques Volnys and produced by Bellincioni film in 1921, led me to believe that this could be another copy

[8] Ibid., vol. IV, p. 1248-50.
[9] Author's telephone interview with Martinelli, recorded on 27 May 2005.

of the film, because of the apparently identical title (one French, the other Italian), the director's (French) and production's (Italian) nationality. Unfortunately, this turned out not to be the case, as a simple check in the CN revealed. Finally, I took the material data of the film into account. The 160 French intertitles, on a closer analysis, revealed numerous spelling and grammatical mistakes. But most important seemed to be the misuse or the inaccuracy of the French vocabulary. Arguably, these mistakes or inaccuracies suggest that the intertitles were a bad translation from Italian into French, or perhaps directly written in French by an Italian adaptor: possible further evidence that this film was not French, but Italian.

The last matter to be investigated was the year of production of the print, the only one known to have survived until today. The significant elements to take into account were the film edge data printed together with the copy by the production company, by the raw stock manufacturers, or by the print laboratory. When I inspected the copy at the CN, I found some Eastman Kodak date codes on the film edges: sometimes a small square with a small circle, sometimes a triangle with a circle. A check in the Eastman Kodak Date Code Chart revealed that this copy of the film was probably printed in 1925-26.[10] Thus, it was possible to confirm that *L'Errante* had been distributed in France at that date, but nothing more could be claimed about the exact year of production or about its nationality.

2.1.2 The restoration

In this section I shall provide an overview of the restoration of this film, together with the restorers' choices. This description – as in the other case studies – may be useful for

[10] Harold Brown, *Physical Characteristics of Early Films as Aids to Identification* (Brussels: FIAF, 1990), p. 45.

understanding not only the film restorers' practice and methodology, revealing techniques that are not often described in the official documentation, but also the theoretical principles by which they are inspired.

One of the peculiar characteristics of most films made until the 1920s is that they were not in 'natural' colours, but printed in black and white and the colours added after printing.[11] The decision to use restoration techniques different from the usual ones (e.g. Desmet or internegative) when restoring *L'Errante* and *Maddalena Ferat* was a result of the meeting in 1998 between Mario Musumeci, technical manager at the CN in Rome, Adriano Aprà, then director of the CN, and João Socrates de Oliveira, technical manager at the NFTVA (London), Head of the FIAF technical commission and member of the Gamma Group. Musumeci was so impressed by the laboratory of the NFTVA and de Oliveira's results when restoring films such as *The Lodger* (dir. Alfred Hitchcock, 1927) and *Napoleon* (dir. Abel Gance, 1926), particularly his work on the colour of these films, that he developed a film restoration project in Rome with the aim of restoring silent films through the reproduction of the original techniques of colouring them by tinting and toning. However, unlike the NFTVA, the CN did (and still does) not own laboratories for developing and printing, thus Musumeci devised an integrated system of collaborations between the CN and two external laboratories, Augustus Color and Studio Cine. In fact, Musumeci was looking for a laboratory that could offer: a chemist with experience in cinematography; a large chemical laboratory; the equipment necessary for maintaining the machinery, researching the solutions (dyes), and preparing the toxic colourings to be employed in this undertaking; a support network for dealing with issues arising during the restoration (e.g. the control of materials or the assembly of coloured prints).

[11] Fossati, 'When Cinema Was Coloured', p. 121. See also Dominic Case, 'Producing Tints and Tones in Monochrome Films Using Modern Color Techniques', *SMPTE Journal*, 96 (1987), 186-90.

Giampiero Ciani, a chemist who had worked as quality control manager at Cinecittà laboratories, was chosen because he was arguably the leading expert in his field at the time. When this restoration project was set up, he was working at Augustus Color, the only studio that could simultaneously offer all the aforementioned features. Not far from Rome, in Oricola, there was also the digital department where it was possible to use a digital Data Spirit telecine, an electron-flow Cineon, and a Da Vinci system to elaborate data. Furthermore Musumeci identified Johan Prijs, a skilled technician, experienced in printing, tinting and toning films, who had left the Haghefilm laboratory in Amsterdam to work as technical director at Studio Cine in Rome, as the key person in Italy to link the expertise of de Oliveira with the work in the laboratories in Rome. Besides, Studio Cine had been the main laboratory involved in other film restoration projects with CN. Thus, Augustus Color and Studio Cine appeared to be the perfect external partners. The project had to be developed with the brand name of CN.

After putting the appropriate framework in place to start this film restoration project, Musumeci invited de Oliveira to Rome to discuss the project together with all the staff of the CN and Ciani. The actual aim was not only to introduce de Oliveira to all the people involved in this project, but also to get information from him about problems concerning nitrate films, such as the colours to be duplicated in the new print. Another important aspect of the project, which should not be underestimated, was de Oliveira's position within the FIAF as president of the technical commission. Thus, apart from the restoration of Italian silent films, another aim of CN seems to have been to offer in the future a film restoration service to other film archives belonging to the FIAF.

The first issue in restoring this film was that the negatives had not survived. The CN had received from Bois d'Arcy only a tinted print and, although its condition meant that it would be extremely difficult to work from, it was decided to make the attempt. Examination of the nitrate print revealed the full extent of the problems facing the

archive's team. The copy had shrunk due to the loss of water, solvent and plasticizer and, even if the law on safety had not prohibited projection, it would not have been possible since the sprocket holes would not fit the size of the toothed rollers of any projector. The problem, as for most nitrate films, is rather that it is not possible to use a common printer to create a new negative from the original print. Apart from any difference in standard size of the height and width of the sprocket holes, the radius of the curves at the corners, the distances to the edge of the film, and the alignment tolerances between two sprockets hole prevent the use of standard gears. The reasons why a film shrinks over time are well known: stock characteristics and inadequate storage conditions (temperature, humidity and sudden changes of both). The degree of shrinkage depends on many different factors that can affect different parts of the film. In coloured silent films the characteristics of the colour dyes can affect the degree of their shrinkage. This phenomenon is crucial in planning the restoration of colour silent films and before any duplication of a film restorers must decide which printer can handle it (contact or optical).

In the case of *L'Errante*, an important obstacle to overcome was the finding and choosing of dyes. Many of the old dyes were no longer manufactured, and others were banned since they were dangerous. On de Oliveira's suggestion, Ciani looked for acidic dyes in a market in Turin called Europe Coat, dedicated to dyes for commercial and/or industrial use.[12] Then, before a standardized system to colour silent films through the original techniques could be established (as de Oliveira had done at the NFTVA working on *The Lodger* and *Napoleon*), the restorers' team had to address the problem of building a prototype of the equipment to be used to tint films. This was made by copying the machine used by de Oliveira in London.

[12] Eventually the colours used were: Croccein Orange 1934-20-9 Amaranth, and Naphtol Green B 119911 manufactured by Aldrich; Telon Blue A3GL, manufactured by Dystar; Telon Blue 81465, manufactured by Dystar; Xilidine 81465, manufactured by Fluka. See CN file R110/2002.

In *l'Errante* there were no toned or stencilled scenes, only tinted ones. Thus, in order to reproduce the original tinted scenes, restorers needed to disassemble the original positive b/w print and separate the scenes according to the colours required. To avoid the loss of a frame during the procedure of reassembling the print, at each change of scene the dupe negative needed to receive one frame more than the original. This also allowed splices to be done, regardless of the base used (triacetate or polyester).

Since there were no toned or stencilled scenes, in the restoration of *La danzatrice russa* the tinting technique was used, which was the same as the one originally employed in the 1920s to colour this film. Reportedly, Vladimir Opela in the Norodny Filmavy Archiv in Prague used the same principle of restoring silent films through original methods of colouring black and white prints even if apparently he did not disassemble the original positive b/w print, but invented a different technique that he has always kept secret. However, it is interesting that the outcome of this restoration was the production of two different prints: the first made through the original procedures, the other by the standard optical method (Desmetcolor), less costly and used for much routine work. The reason was to get a first print as near as possible to the original and a second one available for projection and for comparison with the first. According to Meyer, the former can be used for 'archival' purposes, the latter for 'museological' purposes.[13]

When Musumeci proposed this project of film restoration to the CN, it was clear that the replication of original procedures for colouring silent films corresponded to a particular criterion of restoration both of films and of traditional works of art. The method proposed was intended also to accomplish, if well applied, better results in the quality of the images than those achievable by ordinary methods of optical printing. Finally, it has to be highlighted that the restoration, in this case, also represented an

[13] Mark-Paul Meyer, 'Work in progress', p. 1.

attempt to add a new brick to the wall of cinema history. Without the work of the CN *L'Errante,* an 'orphan film', might have been lost forever.

2.1.3 A positive identification

As I was completing the final revision of this thesis, Irela Nuñez and Maria Assunta Pimpinelli of the Cineteca Nazionale reported in a communication to me of 25 July 2010 that they had identified the film. Its original title was *La via del dolore*. It had been produced by Fert Film Roma in 1924 and distributed by the Società Anonima Stefano Pittaluga. Pittaluga had credited as director Baldassare Negroni, who was more famous than the actual director Guglielmo Zorzi, allegedly in order to attract possible buyers. The positive identification of the film was possible thanks to Nuñez and Pimpinelli's recognition in it of actors Lido Manetti and Marcella Sabbatini playing two of the characters and their comparison of the plot with other previously unexamined sources.[14] It is likely that the film's Italian subtitle, *La Nomade*, provided the French title.

The findings of Nuñez and Pimpinelli have confirmed my initial hypotheses about the nationality, date of production and main character of the film and my exclusion of Negroni as possible director. I believe, therefore, that the considerations which led me to frame that hypothesis remain valid as a documentation of the ways in which a restorer/researcher may deal with an 'orphan film' and for that reason I have decided to keep them here as I originally wrote them.

[14] Vittorio Martinelli, *Il cinema muto italiano: i film degli anni venti. 1924-1931* (Rome: Nuova ERI, 1981; repr. 1996).

2.2 *Maddalena Ferat*: lacunae in the narrative text

2.2.1 The attribution

Maddalena Ferat was produced by Caesar Film and Bertini Film in 1920 (the first Italian censorship document of approval, no. 15601, was granted on 13 December 1920) and released for the first time in Rome on 5 April 1921.[15] Febo Mari (pseudonym of Alfredo Rodriguez, born in Messina in 1881) directed it at the peak of his career as a screenwriter, director, producer and actor.[16] Prior to this film he had directed fifteen other films, the most famous of which is *Cenere*, starring Eleonora Duse and himself in 1916. With Giovanni Pastrone (who used the nickname Piero Fosco) he had also co-directed *Il fuoco*, released the year before.[17] In 1918 he had established his own production company, Mari Film Production, which produced four films in eighteen months.[18] The plot of this film, like that of many films of the period, was adapted from a literary work: in this case Emile Zola's novel *Madeleine Ferat* (1867). Francesca Bertini played the main female role and co-produced the film.

The analysis of the material – an original nitrate print, two triacetate colour prints and a dupe negative made in 1985 – persuaded Mario Musumeci to start a new restoration project. In fact, the film needed not only to be restored, because of the bad condition of the original print, but also to be reconstructed as a text, since – from a narrative point of view – this copy was incomplete. Musumeci also considered the

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[15] The date of this document is wrongly reported as 1 December 1920 in Nino Genovese, *Febo Mari*, Palermo: Edizioni Papageno, 1998, p. 134. The original document is in Museo del Cinema di Torino Archives, MF218.

[16] Vittorio Martinelli mistakenly attributed the film to Roberto Leone Roberti in Martinelli, *Il Cinema Muto: I film del dopoguerra. 1920*, Rome, Edizioni Bianco e Nero, 1980. Martinelli himself rectified this error in the second edition (1991). The same error occurred at the 1988 edition of the festival 'Il Cinema ritrovato', organized by the Cineteca of Bologna. The direction of *Maddalena Ferat* is still occasionally attributed to Roberto Leone Roberti: see <http://www.imdb.com/name/nm0730743/> [Accessed 05 September 2010].

[17] Genovese, p. 96. Pastrone used the pseudonym of 'Piero Fosco' for the re-edition of *Cabiria* in 1931, whereas the original version of 1914 credited only Gabriele d'Annunzio.

[18] Ibid., p. 68.

previous (1985) attempt at reproducing colours unsatisfactory. Another reason that may have contributed to the decision to restore the film then was the centenary in 2002 of Zola's death. This is suggested in a marginal note in Musumeci's hand in file CN – R110 2001/2002, which contains documents on the restoration of *Maddalena Ferat* and which I was able to peruse during my research.

2.2.2 Analysis of source material[19]

In order to reconstruct *Maddalena Ferat* as a narrative text, my first step was to collect other prints and materials for comparison. Unfortunately, a search for these in other film archives proved fruitless. The data presented by FIAF and a book on Francesca Bertini did not lead to any other prints.[20] I therefore assumed that the only copy of this film in existence was the one preserved in the CN. The material available was an incomplete old nitrate print, coloured by tinting. Interestingly, on examining this copy, I discovered that it was a sort of patchwork, composed of different materials:[21] an incomplete old dupe negative in black and white made in 1985; two triacetate coloured prints (one was a check print from June 1985, the other from January 1986), each in two reels, made from the 1985 dupe negative. Both of them contained unbalanced colours and incorrect editing of the titles and intertitles: white letters on a cobalt blue background, completely different from the original, without any philological care taken in the reproduction. In order to obtain a new print and to compare it with the old 'restored' one (1986), Johan Prijs made a new dupe negative from the original nitrate print, from which a new copy

[19] The evidence in this section is based on documents from CN (CN – file R110 2001/2002), my interviews with Mario Musumeci and Maria Assunta Pimpinelli and analysis of material at the CN, including the prints of *Maddalena Ferat* (examined in April 2006).

[20] See *Treasures of Film Archives* (list of films found in the associated film archives, in FIAF, 2003, Available at: <http://www.fiafnet.org/uk/publications/fdbo_content.cfm >, [accessed 29 July 2010]; Gianfranco Mingozzi, *Francesca Bertini*, (Bologna: Le mani – Cineteca di Bologna, 2003).

[21] The edge data indicated not only different years of production (1919, 1920 and 1922), but even different companies (Eastman Kodak and F.I.L.M. Ferrania).

was printed at the Studio Cine laboratories in 2002.

2.2.3 Cleaning, repairing and duplicating the original print

Since the original print was dirty, shrunken and with considerable physical damage (scratches, split perforations, tears, buckling, weak cement splices) it was necessary first to clean it (this was done with a clean-band solvent cleaner containing perchloroethylene) and then to repair it. This decision was made in order to prevent dirt and grime from creating additional scratches and abrasions during the duplication procedures. The print of the dupe negative was made through a Debrie TAI Printer, a 35mm step optical printer, designed with a total immersion wet gate and equipped with a variable pitch pull down mechanism. This method of eliminating scratches on the base and reducing those on the emulsion of the film follows the principle of refraction. Scratches are often invisible grooves to the naked eye, but when the light of a projector passes through a damaged film the light is refracted and scattered by the scratches. In projection they will appear on the screen as dark lines and – if no action is taken – they will be replicated during the duplication process. However, if the film is put into a liquid with an index of refraction similar to that of the film the scratches will be almost invisible. This is not the case if the scratches were on the original negative and technicians need to duplicate a positive print from it. In this case only digital technology can be employed to solve the problem. To handle the shrinkage of *Maddalena Ferat* it was necessary to adapt the mechanism of pulling the film, so that the claws or the sprocket teeth did not miss the perforations, damaging them or, much worse, the image in the frame.

From a philosophical point of view, the duplication of an *original* print (namely the object from which other copies are produced, as it is closer to the supposed first original prints) treated by a wet printer, produces a new object. In principle, when this new object is created the original is left untouched, with exactly the same aspect and the same defects, apart from the elimination of physical damage such as scratches. Yet, this never completely happens, as the original print (or the negative, in the lucky case in which restorers possess it) is necessarily exposed to mechanical and chemical wear during the processing. Furthermore, the restoration of films aims to give back the *aspect* of them, which can arguably be defined as the image projected on the screen. As a consequence, it is not important that the film passing through the projector is the oldest testimony of that piece of work (the *original* in the sense of that which gave *origin* to a new copy of the film), not least because this would be difficult and illegal (nitrate base films were banned in 1951). What is important is that the appearance, the *aspect* of the film, should be as close as possible to the *original aspect*. This is the core argument that requires further discussion in all my case studies and probably in all restorations.

2.2.4 Reconstructing the film as a narrative text: lacunae and intertitles

The comparison between the copy printed in 1986 (from the old dupe negative) and the copy printed in 2002 (from the new dupe negative) highlighted some discrepancies: intertitle no. 29 (‘Domani ve ne andrete. Io dormirò ai vostri piedi’) was totally missing in the new print; the successive scene and another one in the second reel (168.3-171m) were shorter (0.50m). The corresponding parts of the nitrate print that generated the dupe negatives in 1986 had decayed in the meantime, which explains why these parts were missing from the dupe negative produced in 2002.

From a narrative point of view, the plot appeared to be confused because of some missing parts. To reconstruct the narrative flow Musumeci used as a primary source the censorship documents (one dated 14 January 1921, the other 26 May 1922), in which the intertitles were recorded, as was the practice at the time. From the comparison of these documents with the film, it became apparent that twenty-six intertitles were missing (five of them only indicated the parts into which the film was divided) from both the original nitrate print and the dupe negative made in 1985-86. The film's beginning together with the third part was completely missing; an intertitle (no. 29) was missing only from a decayed part of the nitrate print. Unfortunately, the same part in the dupe negative made in 1985 was horizontally torn; four intertitles (in the first reel) were without any image as a reference, because of missing scenes. In order to reconstruct the narrative flow, it was therefore necessary to recreate missing intertitles, and to introduce new ones to summarize the missing scenes. When a summarizing intertitle was introduced to cover a narrative stretch of a certain length, the existing intertitles relating the action scene by scene were eliminated. This decision was made because otherwise the intertitles would not have had any reference to the images, and so would have been 'floating in an empty space'.[22]

In order to reconstruct the texts of the missing intertitles, the censorship documents were used as a reference, and the Zola novel as a more generic narrative guide. The style of the lettering, the typeface, the framework and the pink colour of the letters were copied from the other intertitles in the nitrate original print (Fig. 2.3).

[22] Maria Assunta Pimpinelli (CN) in an email to the author (23 January 2006).

Fig. 2.3 An intertitle taken from the original nitrate print of *Maddalena Ferat*. It is tinted pink, with a square frame around the title, and shows the name of the production company (Bertini Film – Unione Cinematografica Italiana) and a progressive number marking the shot. (Author's photograph)

For the intertitles indicating the parts into which the film was divided, and for whose typeface there was no corroborating evidence, the intertitles of *Mariute* (1918) were used as a reference. The intertitles created by restorers to summarize the missing parts (particularly the third) were typed in a modern style, easily distinguishable from the other both by the typeface and by the absence of colour (white letters on a black background). (Fig. 2.4)

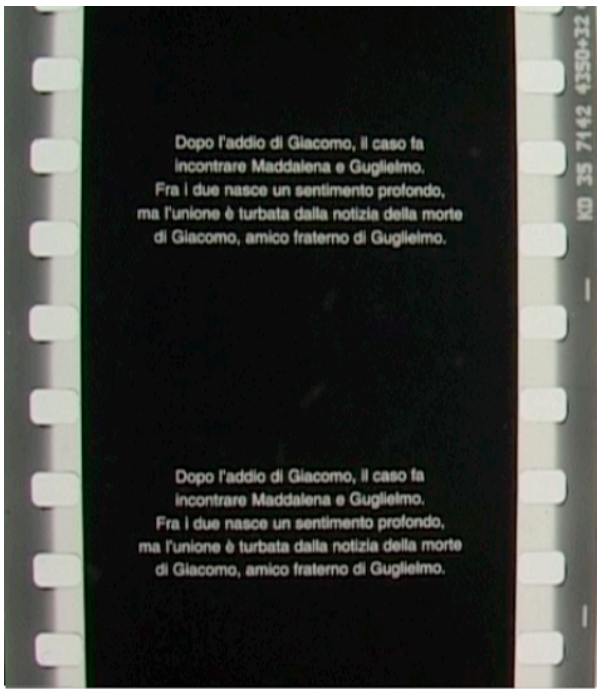

Fig. 2.4 An example of intertitle added to *Maddalena Ferat*. Restorers created intertitles like this in order to summarize missing scenes *and* existing intertitles. As well as being in b/w, there is no frame around the title, or the production company's mark. (Author's photograph)

Summarizing and evaluating the decisions of Musumeci and restorers at CN about the reconstruction of the intertitles, two different criteria emerge: the first is imitative, whereby the style (font, frame and colour) was copied directly from the original nitrate print or from another film of the same age. The second is disparate: the new intertitles, inserted as a summary of the missing parts of the film, are different from the others in typeface, framework and colour. Arguably the disparate method fulfils the principle of recognizability in the interventions made by restorers, marking what was added as a new part that did not exist in the original work. These summaries thus appear to be extraneous to the rest of the film. More ambiguous is the use of intertitles recreated as new using non-film material (e.g. censorship documents), but indistinguishable from the original. In addition, while the use of censorship documents is acceptable because restorers reproduce what was approved as part of the film when it was screened, this method is not always reliable. Sometimes censors revised the film more than once (*Maddalena Ferat* was censored twice in Italy) or differently according

to the country where the film was distributed; thus restorers have to make sure that they possess the final censorship documents. The use of other non-film material (e.g. scripts, screenplays, shot lists) to reconstruct the intertitles can be even more risky because it is difficult to state at what stage of the production they were used. The issue of using non-film material to reconstruct something that *appears* to be like the original film therefore is a delicate one, which deserves careful attention. The imitative method can instead be less problematic when a reference from the film is available, but it is still debatable, because it contradicts the criterion of recognizability and makes the identification of interventions done by restorers difficult.

Interestingly, the disparate method employed in 1985-86 to recreate the intertitles was not based on a particular conviction, but rather on a whim; this is interesting evidence of the attitude of film restoration at the time. In this case all intertitles (reconstructed, copied, or created as summaries) were considered as a whole. This way of approaching restoration complicates matters: first of all it is not possible to distinguish which parts are original and which are not. Secondly, they create an aesthetic disjunction between the images and the intertitles (white letters in modern typeface on a strong blue background).

The last issue to examine is the restorers' decision not to take into account existing intertitles from the censorship records because of the lack of corresponding scenes. An example is the third intertitle in the first scene: 'Quando amerò un uomo non farò come voi, ma gli scriverò io…lo costringerò a portarmi via' ('When I fall in love with a man I won't be like you. I'll write to him…I'll force him to take me away').[23] According to the novel, Maddalena says this to one of her schoolmates. In this case, the question is whether to remove original intertitles when there is no corresponding scene. Such intertitles may indeed appear obtrusive, but the view that it is preferable to

[23] Censorship document of approval no. 15601, 13 December 1920.

substitute authenticated intertitles like these with new ones that summarize both scenes and intertitles is surely questionable.

If one compares the restoration of a broken terracotta pot, one might ask whether the restorer would discard some pieces, only because that part of the pot is completely missing, or whether he or she would use those pieces in an attempt to restore the pot to its original shape. In this case the new intertitles substituting the missing scenes can be viewed as a type of glue that binds complete parts of the film to incomplete sections. Perhaps, the diachronic perception of films, unlike a pot, which can be perceived synchronically, as a whole at once, may justify the stronger intervention of film restorers who decided to remove intertitles without scenes, pieces without the visual shape, substituting all of them with a new whole on the condition that it was clearly marked as a new intervention, while others referred to existing scenes were not distinguished.

2.2.5 Restoring the colours

Like most of the films produced in the 1910s and 1920s, *Maddalena Ferat* was coloured by two different techniques: tinting and toning. In order to reproduce natural colours, tens of different colour film systems had already been devised at that time, but none of them had been commercially successful. Tinting was the most common and cheapest way to put just one unnatural colour on a scene. In fact, it consisted of applying uniformly a colour on a piece of print (a scene/a shot) by immersing it in an aniline acid-dye solution for the time in which the emulsion could absorb the colour previously dissolved in water. Initially colours were applied on the emulsion by a brush-stroke; this method seems to be a simplified variant of hand-painting films frame by frame. In order to get more uniform results and make the process faster and more

effective, films to be coloured were wound on wooden frames that were immersed in a dye bath, before being agitated for three minutes and then washed and dried. Finally, after the scenes had been coloured they were joined together in the narrative order. Since the results of tinting black and white film were never perfectly uniform, stock manufacturers begun to offer some black and white print film on a pre-tinted base as early as 1915.[24]

This procedure reached its peak when sound film appeared at the end of 1920s. Eastman Kodak introduced a new range of pre-tinted films called Eastman Sonochrome Tinted Positive Films that had the advantage of not interfering with the optical sound impressed on one edge of the film, because colours had been applied only on the image area. Films tinted after processing, instead, were not suitable for sound reproduction, because the dye covered not only the image area of the frame, but the sound track area as well, altering the quality of the optical sound. In fact, films became predominantly black and white for five years, in the early 1930s, and there may have been an aesthetic reason for this, namely that synchronized sound with human voices satisfied the cinema goers' need for reality to such an extent that it made these kinds of applied colours unbearably unrealistic.

Toning, unlike tinting or pretinting films, was a less common method because it was more expensive, complex and time-consuming. It was based on a chemical reaction whereby the image-forming silver in the emulsion was replaced, partially or completely, either by various silver salts or alternative metal compounds, or by organic chemical dyes that were selectively absorbed into the emulsion in the exposed, image-bearing areas. The black images thus became coloured according to the density of the silver

[24] From the beginning of 1910 Eastman Kodak put on the market in a well-defined range of colours (red, pink, orange, amber, light amber, yellow, green, blue and lavender). Paul Read has reported that in the Agfa processing manual of about 1925 there is a description of the lacquering process that consists of applying by roller coloured varnishes on the base or on the emulsion side in the image. See his article 'Tinting and Toning and their Adaption for the Restoration of Archive Film', in *All the Colours of the World*, p. 271.

image, whilst highlights – areas of clear film – were still transparent. Interestingly, toning, also in the variant called mordanting, was generally considered 'better suited for the artistic quality of a product' because it 'was based on a principle inherent to the medium'.[25] In other words, toning was not merely the application of an extrusive, external substance to the black and white print but involved a chromatic exchange in the emulsion itself. This characteristic made this method more appreciated. However, whatever the method used to give colours to films, only the positive print received the colours. This helps to establish the point that the 'original' of a coloured film is not the black and white negative, even if it is the matrix for further copies of a film.

Two different attempts were made to reproduce the original colours of the nitrate print *Maddalena Ferat*. The first was a polyester film-based print, to be treated by the Desmet method; the second a triacetate film-based print, to be tinted and toned through a reproduction of the original techniques from the 1920s. After making a dupe black and white negative from the original nitrate positive print, it was possible to follow both methods[26]. Before going further in the analysis of the restoration of this film, it is necessary to outline the procedures adopted and rejected by the restorers. 'Desmetcolor', used since the 1970s, is a method devised by Noël Desmet, head of the preservation laboratory at the Cinémathèque Royal in Brussels, to reproduce colours of tinted and toned films using modern material and film stocks. It is also known as a double-pass print procedure, the opposite of the more common single-pass printing, because of 'two consecutive exposures of the positive print that allow the reproduction of a tinted base and a toned emulsion'.[27]

The first step of this process consists of printing a black and white negative (duplicated from the original positive print, tinted, toned, stencilled or hand-painted)

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[25] Fossati, 'When Cinema Was Coloured', in *All the Colours of the World: Colours in Early Mass Media 1900-1930*, ed. by Gamma Group (Reggio Emilia: Edizioni Diabasis, 1998), pp. 121-32 (p. 125).
[26] The raw film stock used was Eastman Fine Grain Duplicating Panchromatic Negative Film 5234.
[27] Cherchi Usai, *Silent Cinema*, p. 55.

onto a colour print film (such as Eastman Colour Print) on a rotary contact additive lamp house printer. Various settings of printer lights produce the different tone colours required. Therefore, on processing the image, the first result is 'a monochrome of the colour selected with the unexposed areas remaining white'.[28] This is a good approximation of toned images in which only the silver grains are substituted by colour.

The second step consists of a further exposure of the same print film that has already been manipulated, 'to an overall flash exposure at printer light valve settings chosen for the colour of the tint produced'.[29] In this case only the unexposed highlight areas are uniformly coloured. The result is a good imitation of tinting since the entire frame area is suffused with a tint. This photographic method yields a uniform and even result, whereas the original tinting and toning did not. The intensity of the dyes, in fact, was originally governed not only by the immersion time of films in the coloured baths, the pH and the temperature of the solution, but also by washing (particularly critical for toning) and rinsing procedures. Desmetcolor allows the imitation of two different techniques (tinting and toning, also mixed together) in the same print film. An alternative process, as mentioned above, is the more common single-pass printing by which a black and white duplicate negative can be printed onto a conventional modern colour print film. Yet, it is not possible to imitate tinted, double-toned or tinted and toned films. In fact, only toned films can be satisfactorily duplicated, since a modern colour internegative (integral tripack) presents a fixed contrast and an overexposure produces hazy monochromes. The black and white image, originally tinted with a colour laid on the emulsion, appears instead as a denser coloured image.

An alternative method, developed in Australia by Dominic Case (affiliated with Colorfilm Pty Ltd) to restore the 1927 Australian film classic *For the Term of His*

[28] Nöel Desmet, Paul Read, 'The Desmetcolor Method for Restoring Tinted and Toned Films', in *All the Colours of the World*, pp.147-50 (p.149).
[29] Ibid., p.149.

Natural Life, is quite similar to Desmetcolor.[30] It is a double-pass printing technique whose aim is as faithful a duplication as possible of a tinted and toned film, using modern colour techniques. The only difference between it and Desmetcolor is that it involves duplication of the 'black and white' negative on Eastman Colour Internegative. This choice was made because it was felt that a colour negative 'would make a more stable starting point than a black and white negative and make grading and analysing reasonably straightforward'.[31] The comparison between these methods described in Read and Meyer's *Restoration of Motion Picture Film* suggests that Desmetcolor, as well as being less expensive, obtains a finer grain on the final print.

However, it is important to highlight that Desmet follows a modus operandi that is methodologically close to the original technique. In fact, the black and white image is produced separately before the application of the colours, as was the case when silent films were tinted and toned. In making the dupe negative the colours of the original print are removed to get a black and white matrix. Colours are added on the positive print only in the subsequent steps: firstly, when the film is printed through coloured lights, obtaining an image in which black is substituted by a colour (a procedure imitating toning); secondly, when the film, printed in black and white, is flashed before being processing (a procedure imitating tinting). The combination of these processes forms a good imitation of a tinted and toned film, albeit one created using modern materials.

The benefits of Desmetcolor are not only the reduction of costs, but also the choice of effect and the control of contrast. Moreover, it is easier to conserve this material than it is to conserve contemporary colour film stock, because the latter is vulnerable to decay (e.g. vinegar syndrome) and colour degradation (a multi-layered colour emulsion is much more unstable than a black and white print), problems that

[30] Case presented a variation of this method: see his article, pp. 186-90.
[31] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 288.

have not yet been resolved. With this procedure it is also possible both to recover the original dyes, when they are faded, and to colour those parts that are black and white in the original, and to get an even result, while original colours were not usually even. On the contrary, a simple procedure of duplication through colour internegative, apart from being limited in contrast, reproduces the existing faded colours only. The drawbacks in using Desmetcolor are that the final print on modern colour print stock may not accurately reproduce 'some saturated red and green dyes used for tinting and toning'.[32]

From a philological point of view, what can be considered a benefit, such as uniformity of results in colouring new prints, can be also regarded as a disadvantage. The original tinted and toned films were not evenly coloured and they often presented variations of dye density. Desmetcolor can make the new print better coloured and more suitable for a modern audience, but certainly different from the original. When the film was released cinemagoers were accustomed to watching films with flaws that nowadays would be unacceptable, such as jittering images or changes in colour concentration. So, once again, the *aspect* was different. A restoration can enhance the original film and its aspect, but this makes the responsibility of a restorer even greater than before: the more instruments he or she acquires, the larger his or her potential field of intervention. However, the boundaries of the intervention made by restorers do not appear to be clearly defined.

The other possible method of restoring the colours of *Maddalena Ferat* was to reproduce the original tinting and toning procedures. Mario Musumeci claimed this process could achieve results that were more faithful, closer to the original than those of any other method. This procedure was described in the early technical literature, but only in the last few years has it been proposed as an alternative for reproducing tinted

[32] Ibid., p. 290.

and toned films.[33] It is a costly and time-consuming practice and it is unfortunately still true that film archives without their own processing laboratories or facilities 'are not usually in a position to persuade commercial laboratories to commit their processing tanks – or their chemists and operators – to such bizarre alchemy.'[34]

Nevertheless, thanks to Musumeci, both *L'Errante* and *Maddalena Ferat* were entrusted to Augustus Color for the process of tinting and toning the new prints. I attempted to ascertain whether this method was uniformly applied and how close the results were to the original print. Unfortunately, laboratories are quite possessive and secretive about their work. I was permitted to film only part of the preliminary work of tinting when Luigi Boriosi prepared the dye solutions for tinting *Maddalena Ferat*. Surprisingly, the method used to establish the hues was simply a visual match between the dyes and the colour of the scenes in the original nitrate print. Although it is well known that tinted and toned materials have faded over time, not only because of poor washing or poor storage, but also because of the heat of projector lamps (especially at the centre of the frame), and the coloured images we see today are the result of a long process of decay, it seems that no attempt was made to measure the hue, saturation and brightness by numerical values (e.g. by colour densitometry and spectroscopy analysis) in order to recover information about the appearance of the original colours. Even if there is no record of the original colours, something might have been done to collect information about them.

In order to understand better what had been done on the colour restoration of *Maddalena Ferat*, after acquiring all the information I could collect from Musumeci and Pimpinelli, I analyzed all the material on a rewinding table equipped with a diascopy and on a four-way film synchroniser. First of all, I examined the original nitrate print on a rewind-table. It was in very poor condition: most of the perforations were seriously

[33] João de Oliveira in a private conversation claimed that he had applied these original techniques in works of film restoration since 1976. Cf. also Read, 'Tinting and Toning Techniques', pp. 157-67.
[34] Case, p. 187.

damaged and the print was brittle and fragile. Unfortunately, only some of the perforations and other physical damage had been repaired. The edge data of the film revealed the presence of a series of numbers placed between the perforations, together with the indication for colouring the scenes. I noticed that the numbers might have identified the hue, the technique to be used, and every single shot. For instance in the scene in which Maddalena wakes up at dawn with her lover Giacomo, the shot is indicated as '31' followed by 'I rosa, V bleu': this means that the scene was to be edited after thirty preceding shots and it was to be coloured in pink (*rosa*) by tinting ('I' stood for *imbibizione*, tinting in Italian) and in blue by toning ('V' stood for *viraggio,* toning in Italian). So, the sky appeared pink and the water of the river blue. Unfortunately there are no other indications of the types of blue and pink to be applied to the scene, but this is a clear indication of the original techniques used. Furthermore, it might also indicate how laboratories worked at the time the film was made. It confirms that only the positive print was edited: after printing, the shots were spliced together according to the dyes to be put on, disassembled after colouring, and then finally edited in narrative order. Shots in a row with the same colours were taken all together. For example, the scene in which Maddalena Ferat is assaulted by her tutor during the night has the numbers 46 to 50, with 'I bleu' (blue tinting) written only on the edge of the first shot (46). In line with the most common use of colours, that for mimetic purposes, blue was employed to produce a night effect. Interestingly, the print of these shots is without splices. Evidently, sometimes the negative was edited and printed as a whole, departing from the usual practice of editing only the positive, because this way the process was faster and more practical.

The comparison on a multi-way synchroniser between the nitrate print and the two new prints (one by Desmetcolor, the other by the reproduction of the original techniques — both printed on Eastman 5234) showed that many of these indications on

the edges were not taken into account.[35] First of all, colours that had faded over the years were copied as they appear today. For instance some scenes, like nos 46-50 cited above, that were originally tinted in blue, were coloured in green in both the new versions because the original blue had faded to green (Figs 2.5 – 2.6). Others (284-361-368-370) originally tinted purple, were coloured for the same reason pale yellow (Desmet) or pale blue (O.T.); when the purple had faded to black and white, it was reproduced as black and white.

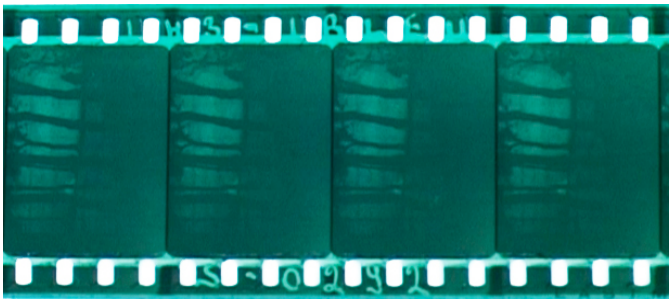

Fig. 2.5 Frame from *Maddalena Ferat.* The inscription on top of the frame indicates that this shot was originally tinted blue. The decay process has turned these frames green. (Author's photograph)

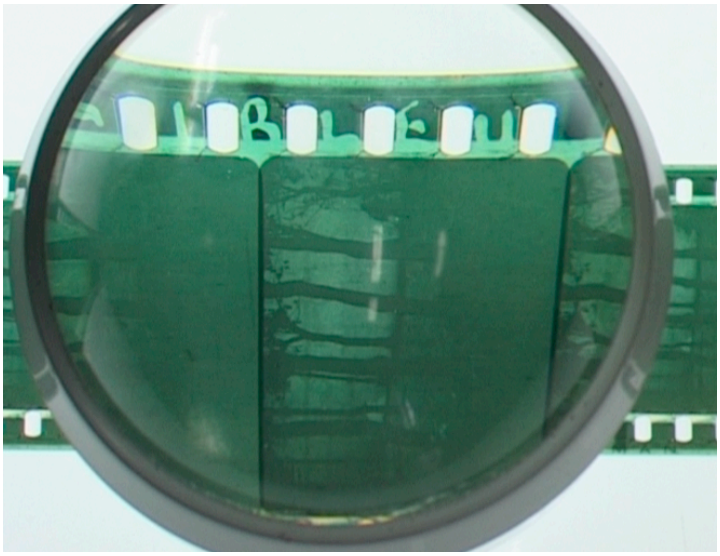

Fig. 2.6 An enlargement of the frame above, in which the word *bleu* is clearly visible. (Author's photograph)

Secondly, the combined techniques of tinting and toning, which gave a special colouring to some scenes, were wrongly reproduced. In the scene set at dawn cited

[35] In CN 30-A-11 (2 reels x 600 m.): from now on Desmet. In CN XV-T-5 (4 reels x 300 m.): from now on O.T.

above, tinted in pink and toned in blue, the colours were partially reproduced in O.T.: in fact only the pink was added to the new print by tinting.

Finally, all the toned scenes were misrepresented in both versions. In the Desmet version the toned or tinted/toned scenes, which had faded, were reproduced with the faded colours. In the O.T. the toned scenes were reproduced by tinting (e.g. shot no. 123 toned in green was tinted in green). Thus, the toned scenes are wrongly coloured sometimes because of the dye itself (e.g. scene no. 325, toned in green, appears tinted in pale yellow), at other times because of the intrinsic differences between the techniques (e.g. scene no. 123, toned in green, appears tinted in green, but the colour is spread all over the frame, whereas in the toned scene only the silver image is replaced by the colour, while the other parts should be transparent).

Even worse is the reproduction of those scenes in which a combination of the two techniques had been used. In the O.T. all originally tinted and toned scenes were only tinted.[36] All intertitles are reproduced with black background and pink letters, as in the original nitrate print, apart from those added to summarize missing scenes, which have white letters in a modern typeface. However, one of these new intertitles, inserted on the basis of the censorship documents, is tinted yellow. Maybe the reason for this mistake is that the following shot is tinted yellow and the laboratory spliced it together with the intertitle.

In brief, the Desmet print seems to be closer to the nitrate print as it appears nowadays, while the O.T. presents more discrepancies with the original print both

[36] Shot no. 31, a delicate mix of pink and blue, appears coloured only in pink. Shot no. 129, originally tinted yellow and toned in blue, was entirely tinted in pale yellow (the toning had faded and the scene in fact appeared pale yellow); all shots from 311 to 325 (apart from nos 316-318), originally tinted orange and toned in sepia, were wholly tinted orange; all shots from 235 to 272, originally tinted pink and toned in sepia, which had now faded to pink-orange, were wholly tinted red (arguably not only because of the resemblance with this present appearance but also because of this contiguity with other scenes of the same colour, nos 231-234 and 269). However shots 350-352, which were likewise tinted pink and toned in sepia, were tinted pink. Shots 299-310 and 316-318, originally tinted yellow and toned in sepia (now faded to amber-orange), were wholly tinted pale green. Shot no. 369, originally tinted purple and toned in blue, was tinted pale yellow.

because of the appearance (in the faded tinted shots) and because of a methodological mistake (tinted instead of toned shots).

Because of lack of information and documents both at Augustus Color and in the CN, it can only be surmised that the original purpose of Musumeci's aim of reproducing original colours by original laboratory techniques misfired because of difficulties in proper toning (a very difficult technique and unpredictable in its results) and failure to collect available data (namely the indications on the edges of the original nitrate prints). Perhaps the project was intended as an experiment and not as a full-scale restoration. In the final new print the title for the screening reports that the film was restored only by Desmetcolour. Interestingly, *Maddalena Ferat* is presented as a tinted film, whereas in fact it is tinted and toned.

It is worth adding that the sequential numbers on the original nitrate print edges, indicating the order of the narrative flow, were sometimes missing or placed apparently in the wrong order (e.g. inverted shots). Interestingly, as in the case of the indications about the colours and the techniques applied, these data were not taken into account in the reconstruction of the film as a narrative text. While it might seem reasonable to avoid arbitrary intervention in editing certain scenes, unless there are firm grounds for doing so, it is nevertheless very difficult to explain why the indications about colours were not followed.

From an historical point of view, it is interesting to compare the colours in the 2002 restored prints (Desmet and O.T.) with the 1986 print made by Studio Cine.[37] This comparison is revealing of the criteria of film preservation adopted only a few years earlier. Firstly, the method used to reproduce the original colours was to copy them onto an integral tripack Eastman colour internegative, printed onto a modern colour print stock. This is a common method of duplicating coloured archive films, especially hand

[37] The 1985 print has not been taken into account because it was a check print.

and stencil coloured films, for which other alternatives aimed at reproducing the discrete original patches of colour do not exist anymore. At least, it was not copied in conventional black and white, recording the colours in separate sheets.

However, the colours were all mismatched with the originals (e.g. blue tinted shots used for the night scenes were reproduced as purple) and they appear different both in hue, saturation and brightness. Titles and intertitles are completely different from the original: the background is cobalt blue, instead of black, and the typeface of the letters is modern. Finally, the missing shots/scenes (narrative lacunae) are indicated through intertitles that give only an approximate length in meters and time duration and not even a summary of the plot. Moreover, there is no attempt to reconstruct missing intertitles. Perhaps, in 1985-86 CN was not really interested in restoring this film and the wish was only to show a silent film as coloured, which at that time was still a novelty as silent films were usually duplicated in black and white. Thus, the lack of awareness about principles and methodology of film restoration may have affected the 1985-86 intervention, which appears as a mediocre work of duplication.

2.2.6 Conclusion

To gain a better understanding of the problematic work of film restorers and to extend the discussion of concepts such as *duplication* or *faithful reproduction* and *restoration* it is necessary to consider the difficulties with which film restorers have to deal. Most of the materials used for film restoration were not conceived for this purpose. Film industry and raw stock manufacturers do not consider the restoration of films a priority: the duplication of an original negative or print is taken into account only for recent material. Film production companies are exclusively targeted to dupe negative

manufacturing, in order to make as many release prints as possible in a very short time. The reason is purely economic: they want to saturate the market. Moreover, the chromatic characteristics of film stocks are constantly updated to respond to the technical requirements of the modern camera negatives. In brief, long-term conservation is not the principle aim of the film industry.

In the last case examined above (the 1985-86 work of 'restoration') a colour internegative was used that was created originally to duplicate reversal films (Ektachrome), not positive prints coloured in the 1910s and 1920s. In fact, also the black and white dupe negative, used in the restoration of *Maddalena Ferat* in 2002, was produced to duplicate a *lavender* (a dupe positive), not prints. This means that film restorers have to force modern film material to perform tasks for which it is not designed. Thus, the aspect of the *new prints*, the *restored films*, can be considered an approximation to the original. This is particularly true in consideration of the fact that modern projection equipment also presents different characteristics compared to old projectors (see 1.1). As a consequence, since the structure is different, the aspect of the silent films is also different. What the restorers are trying to realize is an approximation to the original aspect.

Leaving aside the mistakes made by laboratories in duplicating, printing or colouring, we may conclude that the restoration of *Maddalena Ferat* examined in this section exhibits imperfect or objectionable reconstructions of the narrative text, and the jumbled methodology outlined in this section, together with the material and the equipment used, contribute to determine the percentage of approximation to the 'original'.

2.3 *Gli ultimi giorni di Pompei*: Restoration as Spectacle

The distinctiveness of this case of restoration consists on the one hand of the fact that the original proposal came from a composer (and thus the possibility of restoring or reconstructing an original score was not an issue) and on the other of the fact that it was done with a view to a particular decision about programming or presentation, namely a screening of the restored film in the archaeological site of Pompei to maximize public impact. In brief, one can interpret this work as a form of interpretation or – less generously – as a form of remake aimed at a public spectacle. In the analysis that follows I discuss these twin aspects of the restoration project as well as two sets of technical choices it involved: those about the difficult task of restoring stencil colours and those regarding the problem of the different editing in the available copies.

2.3.1 An unusual proposal

Gli ultimi giorni di Pompei (*The Last Days of Pompei*, hereafter abbreviated LDP), directed by Amleto Palermi and Carmine Gallone and first released in 1926, is one of several film adaptations of Edward Bulwer-Lytton's novel, originally published in 1834.[38] Contrary to the production company's expectations, this epigone of the Italian epic, a genre that had helped popularize the burgeoning art of cinema, was a failure. Most of the reviews were unfavourable: apart from praise for the set design, the architectural reconstructions of Pompei and the eruption of Vesuvius, *LDP* was considered too long, boring, immoral in the scenes with almost naked women at the

[38] For a detailed history of the various versions of *LDP* see Vittorio Martinelli, 'Sotto il vulcano', in *Gli ultimi giorni di Pompei*, ed. by Riccardo Redi (Naples: Electa, 1994), pp. 35-62. For a comparative analysis of the different adaptations see also Alex Marlow-Mann, *Gli ultimi giorni di Pompei, or the Evolution of the Italian Historical Epic (1908-1926)* (unpublished MA thesis, University of East Anglia, 2000).

baths (in the Italian version) and not well performed by the foreign actors.[39] More recently Riccardo Redi has described *LDP* as a 'mistaken' project. He argues that even if the film had been more competently made the era of the ancient world epic was over by 1926. The audience could not accept a film like this after watching hundreds of new German and American films.[40] Gian Piero Brunetta judges *LDP* even more harshly: he defines it as an unintentionally comic film, at least in its intertitles, and as stylistically outdated, still attached to a static use of the camera.[41] Thus, Emilio Ghione's punning definition of *LDP* as 'The Last Days of the Italian Cinema' may be partially justified.[42] However, Alex Marlow-Mann has recently reassessed *LDP* after making a close stylistic analysis and has challenged 'the prejudice that the Italian cinema was retarded or less cinematic in terms of its rejection of an analytic dissection of the scene.'[43]

One might ask, nevertheless, why the Cineteca Nazionale decided to restore this film instead of many others, since the issue about the choice of what to restore is so sensitive.[44] The fact is that the project originated in 1990, when Antonio Coppola made contact with the CN to compose an original score for this film. Coppola had gained good experience as an accompanist-pianist for silent film festivals, but his aspiration was to create music for a blockbuster film, as Carl Davis had done for Kevin Brownlow's restorations of Abel Gance's *Napoleon* in 1980 and of Griffith's *Intolerance* in 1989.[45] Coppola began by proposing a list of attractive potential titles.[46] His proposal to restore a silent film to be shown with his music was accepted, but the

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[39] See *Gli ultimi giorni di Pompei*, ed. by Redi, p. 134. Mario Orsoni, writing in 1943, was highly critical, defining *LDP* as an 'old' film already at the time it was made and, by the time he wrote his review seventeen years later, as 'very old'. See Orsoni, 'Gli Ultimi giorni di Pompei' *Cinema*, 7 (1943), 158-59.
[40] Redi, *Cinema muto italiano* (Venice: Bianco e Nero and Venice: Marsilio, 1999), p. 177 and p. 197.
[41] Brunetta, *Storia del cinema italiano*, p. 317.
[42] Emilio Ghione, 'Gli ultimi giorni della cinematografia italiana', quoted in Redi, 'Da *Quo Vadis?* a *Pompei*' in *Gli ultimi giorni di Pompei*, ed. by Redi, pp. 27-34 (p. 34).
[43] Marlow-Mann, 'Gli ultimi giorni di Pompei', p. 44.
[44] I have discussed this issue in 1.1 and 2.1. See also Micciché, p. 11.
[45] A shorter version of the restored *Napoleon* was shown in New York in 1980 with a different score, by Carmine Coppola, father of Francis Ford Coppola (but no relation to Antonio).
[46] *Don Juan* (dir. Alan Corsland, 1926), *Nero* (dir. J. Gordon Edwards, 1922), *The Crowd* (dir. King Vidor, 1928), *The Wedding March* (dir. Eric Von Stroheim, 1928) and *Tabu* (dir. Friedrich W. Murnau, 1931).

CN staff offered him *LDP* as the film on which to work. Coppola enthusiastically accepted, saying he was happy with the choice because he thought that the film was of similar stature to the large-scale American and German productions of the time. On the one hand, he was sure that his music could lighten the effort for an audience watching a silent film of two and a half hours; on the other hand he was concerned about the length of the film, which would need to be cut into three parts, and consequently his music as well. After analysing the film, Coppola asked Mario Musumeci, preservation officer of the Cineteca Nazionale, for the film to be projected at 20ft/sec so as to avoid unnecessary work to modify the score, since he had already composed 12 minutes of music. [47]

It is interesting how, in this case, both the initial proposal for the restoration and the impetus for certain technical decisions (speed of projection and partition of the film into three sections) came from the composer of the score. Given that film archives have to deal with a huge amount of material to preserve and the unstoppable decay of films, the preservation officers' choices can make the difference between saved or lost works. This is a case in which an external proposer gave a push in a certain direction, directing the CN towards the restoration of one film rather than another, and the reasons for this were the ambitions of both Coppola and Angelo Libertini, then general manager and film archive curator of the CN.

[47] Antonio Coppola, telegram to Mario Musumeci, 8 July 1991, Prot. no. 5608/1226, 9 July 1991 CN-Rome.

2.3.2 Collection and analysis of initial material

The copy of *LDP* preserved in the CN was a dupe b/w negative, made from a nitrate coloured positive, which had decayed over many years. Unfortunately, there was no record of the colours of the original print because, as was common practice in the past, coloured nitrate prints were eliminated when in bad condition because of the dangerousness of the nitrate flammable base. In the formal deliberations over the restoration of *LDP* Libertini claimed that the reasons why the CN had not duplicated the colours were both that at the time the techniques were too costly and not very reliable, and that the material was in poor condition.[48]

The first step in the restoration project was to collect other prints, if possible coloured, in order to acquire as much information as possible about the colours of the scenes and versions that might be in existence. To this end Libertini asked the Associazione Italiana per le Ricerche di Storia del Cinema and most of the FIAF film archives for other copies, fragments and extra-filmic material (documents, photographs, articles, advertisements) about the film.[49] The only useful material found was in Vienna and London. In Vienna there was a tinted nitrate print with Czech intertitles in b/w (3040 m in 5 reels) containing only one shot toned in green, not in very good condition. The second consisted of a nitrate tinted and toned print with stencil colour in both the first and the last reels (2246 m in 10 reels), and another, a short reel, about 80m (without intertitles), acquired by purchase in 1939 – corresponding to the first reel –

[48] Angelo Libertini, ordinance no. CS/93, 11 February 1993, CN-Rome.

[49] Film archives that answered the request from the Cineteca Nazionale for material of *LDP* were MoMa New York (31 January 1992), Canberra, Washington DC, Montevideo, Mexico City, Buenos Aires, Montreal, Lausanne, Stockholm, Vienna, London, Madrid, Brussels (all the latter contacted on 4 December 1992), Pacific Film Archive, Berkeley, CA (9 December 1992), Munich (15 December 1992), Bois d'Arcy, The National Library of Australia Film and Video Lending Collection (contacted on 10 February 1993), Prague (17 February 93). Film archives that did not answer were Gosfilmofond, Moscow, Cinémathèque Municipale de Luxembourg, Filmoteca de la Unam Mexico, Cinemateca Portuguesa, Cinémathèque de Toulouse, National Film Center Archive Tokyo, Cinemateca do Museu de Arte Moderna Rio de Janeiro, UCLA Film and Television Archive Los Angeles (all contacted on 4 December 1992).

with stencil colour as well. The print – tinted in magenta and toned in blue – had English intertitles, which suggests that this copy was probably released in the United Kingdom.[50]

Apparently, in addition to the material in London and Vienna, another print of *LDP* had survived. It was preserved in the Museum of Art in New York, but it was a b/w 35mm acetate print given by exchange with the CN in 1972. It had Italian intertitles and was 3,954 metres long, without any parts in colour. The curator, Eileen Bowser, suggested that it did not seem that MoMA had 'anything to help with this project of restoration.'[51] This statement needs to be questioned. In fact, even though the print was in black and white, it might have been useful to check the edit for possible differences, in order to reconstruct the text. Cherchi Usai discussed this issue in an article about *Cabiria* (1914), demonstrating that a poor 16mm neglected copy of a film could contain some interesting material, which could be very useful in a restoration.[52] This has been the case recently when Paula Félix-Didier and Fernando Peña found the most complete version of *Metropolis* (dir. Fritz Lang, 1927) to date – a 16 mm dupe negative – in a small Argentinian film archive.[53] However, the CN preservation officers decided not to examine the New York copy. The length of the Italian dupe negative and that of the copy preserved in New York were almost the same (3,958.3 m – 3,954 m) and the fact that the CN had given the copy to MoMA in 1972 suggested that it was possibly a print from the dupe negative kept in the CN. Moreover, the New York copy was in black and white, therefore not useful for restoring the film's colours.

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[50] The longest print had been donated to the then National Film Archive (NFA), now BFI National Archive, in spring 1992.
[51] Eileen Bowser, letter to Angelo Libertini (31 January 1992). This is a non-archived letter contained in the file R/110/1993/96 at the CN-Rome.
[52] Paolo Cherchi Usai, 'Cabiria, an Incomplete Masterpiece: The Quest for the Original 1914 Version', *Film History*, 2 (1988), 155-66 (p. 60).
[53] Karen Naundorf, 'The Metropolis Mystery', *Sight and Sound*, 18 (2008), 26-9.

2.3.3 Comparison of different prints

After the available material had been collected, the second step was comparison of the different prints. This revealed that the Italian one was the longest – 3,958.3 metres in 14 reels – and possibly also the most complete in a narrative sense.[54] The nitrate copy from Vienna was shorter, but fully tinted, apart from a scene (that of the magician) toned in green. However, the intertitles were all in black and white. The print from London was more valuable for the colours. In fact, the colours of the stencilled parts at the beginning and at the end and also of the tinted parts were more vivid, and the intertitles were toned in blue, tinted in magenta and inserted in ornate frames.

The differences between the copies also concerned the narrative text. In fact, the nitrate prints revealed that they contained a certain number of scenes that were different from the CN copy (length, shooting and editing). The most relevant was the scene of the baths. In the Italian edition the women who attend to the care of their bodies are naked, whilst in the Czech and English ones they are not. The reason for this substantial difference seems not to be only technical (dupe negative was not yet available on the market) but may be explained also by a deliberate choice on the part of the producers who probably used different shots in order to prepare different editions according to different markets. (Figs. 2.7 - 2.8)

[54] I assumed this measure after checking the film on a flatbed, thus confirming a note by Livio Luppi, Technical Manager of Cinecittà Laboratories and Consultant of CN for this restoration. The measure reported by Libertini in another note (4,025 m) was discarded, since possibly it includes also the leaders at the start and the end of each reel. Also the measurement (3683 m) stated by Martinelli in *Il cinema muto italiano: I film degli anni Venti. 1924-31* was not taken into account. Apparently, the latter is the released Italian version, which was censored and amended with cuts of nude scenes as stated in the censor's certificate of no. 22422-31/1/1926.

Fig. 2.7 On the left is a frame from the Italian version: the female protagonist is naked and is holding a mirror in her left hand. On the right is the corresponding frame from the Czech version: the protagonist is wrapped in a towel and is holding a mirror in her right hand. (Author's photograph)

Fig. 2.8 On the left is the last frame of a shot taken from the Italian version: the woman standing is naked. In the corresponding frame from the Czech version, the woman is still covered by a towel. Clearly, there is a difference in editing: the last part of the shot, in which the woman sheds her towel, seems to have been cut in the Czech version. (Author's photograph)

In addition, whereas Alfredo Panzini, a leading writer of the time, had written the original intertitles, from which it may be assumed that the others were derived, both the Czech and English prints had their own original intertitles, which are historically interesting.

Anne Fleming, deputy curator at the National Film and Television Archive (NFTVA), wisely despatched the material to the CN only after having made a tint record plus a black and white safety copy, as insurance 'in case anything were to

happen to the nitrate material in transit.'[55] This decision can be related to the principle of preservation and reversibility, stated by FIAF in its *Code of Ethics*.[56] The preservation of the original material, even when a better new restored print has been produced, allows other researchers to obtain information on the original material and thus future restorers to try new restoration work. The insistence of the Österreichisches Filmmuseum on getting back not only the nitrate original print but also a new safety colour copy can be explained by the same reasons. The damage to which the Austrian material was subjected – as described later in this section – demonstrate that Fleming adopted a more long-sighted attitude.

Another point of interest is that the early research that was undertaken for the restoration was based on documents of non-film material (magazines, stills, papers). The main reason for this was that the plan of restoration involved the production of a book concerning the whole project, but it was also because of the differences in colours and some narrative discrepancies. The only documents found were a couple of issues of a weekly magazine kept in the Biblioteca Nazionale Centrale in Florence, devoted to the film, which reported the synopsis.[57] Unfortunately, this was of no help in restoring the colours of the film because there were no records of them, and very little in reconstructing the film text, because the articles contained only a generic synopsis. More interesting is the account of the premiere, where the performance of the orchestra playing live is reported, though there is no information about the music performed.

[55] Anne Fleming, letter to Angelo Libertini, 18/2/93, Prot. no. 1880/475 CN-Rome.
[56] <http://www.fiafnet.org/uk/members/ethics.cfm> [visited 4 September 2010].
[57] *Le Grandi Edizioni Cinematografiche*, no. 8, 20 February 1926, and no. 9, 25 February 1926.

2.3.4 Cleaning, repairing, duplicating the source prints

In order to duplicate the positive prints to obtain dupe negatives, it was necessary to clean and repair the physical damage in the copies. The operations were entrusted to Cinechimica in Rome. Musumeci asked Gianfranco Dondi, responsible for this work, to clean the nitrate prints with extreme care, also in order to ascertain whether there was a protective lacquer on the base, which it would be imperative not to remove. The repairing of sprockets and the cleaning of dirt had to be done meticulously by hand, using light solvents. A number of pieces in reels 1 and 2, however, were damaged at the laboratory of Cinecittà.[58] In order to repair the damage and return the complete copy to the Österreichisches Filmmuseum, this part was printed from the other elements the CN possessed. Thus, it might be worth noting that – after the restoration – the original Czech material had lost some parts of the original nitrate print, but they were replaced in the new 'restored' safety copy provided by the CN. This is not only a matter of material. The parts inserted by the CN to replace the loss were a *duplication* from other sources. Even if this material had been exactly the same as that in the original Czech print, replacing it was a questionable procedure not only because of editing (different camera negatives were used in filming the prints), but also because the principle of reversibility for future restorations seems not to have been upheld in this case.

2.3.5 Restoring the colours

In order to restore the colours of *LDP*, the available material consisted of an English nitrate print stencilled (Pathé colour) in the first and last reel (plus another short reel

[58] Angelo Libertini, letter dated 29 March 1993. Prot. no. 3224/816 CN; Angelo Libertini, letter dated 15 December 1995, Prot. no.12542/4743 CN.

with stencil colour), a tinted and toned Czech nitrate print, and a black and white safety print originating from a nitrate Italian print that had subsequently been destroyed. The work of restoring colours appeared to be difficult, since they came from different sources and had been created through different techniques. The problems at issue were both to reproduce colours from nitrate on modern stocks and to obtain even results.

When the project to restore this film was launched, it was not very clear to the CN preservation officers which was the best method to reproduce the colours of the original nitrate prints faithfully, especially those parts coloured by stencil.[59] In fact, in the early 1990s there were only sporadic specific publications on technical problems of colour reproduction and the so-called Desmet method had only just been described in a FIAF bulletin.[60] Thus, Musumeci asked Paolo Cherchi Usai, then assistant curator at the Film Department of George Eastman House, for advice about the possible best method to reproduce colours, adding that he would work on the basis of conjecture, as in textual criticism, if there were no clues regarding the original colours (in fact, only some parts of the foreign copies were coloured). Cherchi Usai, without citing Desmet but almost certainly referring to his technique, mentioned an efficient method that had been developed at the Cinémathèque Royale in Brussels.[61] However, he stressed both that modern film stocks did not faithfully reproduce the chromatic density of the original colours and that attempts at tinting and/or toning through original techniques involved a very cumbersome and difficult procedure. Cherchi Usai therefore suggested that it would be better for Musumeci to leave in black and white the parts without any evidence of colours. This choice could be explained in a title at the beginning of the restored copy. In a work of restoration intended to last for a long time, the reason for not adding conjectural colours, even though they were plausible, was that other nitrate

[59] One of the first clearest publications about this issue is Case's article.
[60] Noël Desmet described this technique in *Disorderly Order; Colours in Silent Film* ed. by Daan Hertogs and Nico De Klerk (Amsterdam: Stichting Nederlands Filmmuseum, 1996), p.74.
[61] Cherchi Usai's letter to Mario Musumeci dated 10 December 1992. Prot. no. 9425/2994, CN-Rome. About Desmet method see also 2.2.5.

coloured versions might subsequently come to light. In this case, it would then be easier to produce another restoration of the film, and more reliable to add colours with the certainty of an extant version for reference. For these reasons the work on the black and white negative had to play a prominent part. Here it is quite clear that Musumeci and Cherchi Usai, though both were concerned with criteria of restoration, had different perspectives. Musumeci's was 'museological' (see 1.3), since he was trying to obtain a print for public exhibition which would meet the demands of a large audience; Cherchi Usai's was 'archival', since he was more concerned with the ethics of preservation.

However, the idea of working from conjecture had a precedent. This is why, in the same period, Libertini wrote to the Svenska Filminstitutet Cinemateket (SFC) in Stockholm to obtain information about a work of restoration on *Berg Ejvind och hans hustru* (dir. Victor Sjöström, 1918), presented by SFC in 1986 at the Giornate del Cinema Muto in Pordenone, in which the Swedish film archive provided a 'restoration' of the possible original colours in Sjöström's film, which had been reconstructed by conjecture (a typical method of textual criticism).[62] Libertini was interested in knowing as many details as possible about the Swedish enterprise, since he was planning a similar task. Inga Adolfsson, film preservation officer at the SFC, replied that, although there were articles and reviews showing that the film was coloured, she had no way of knowing which colours had been originally used. Adolfsson, together with the director Julius Jaenzon, had looked at other films of the same period, where arguably it could be possible to get information about colours. Thus, Adolfsson had used these other films as guidelines for the colour choices. In this case the SFC preservation officer had provided colour restoration, without knowing anything definite about the original tinting.[63]

[62] Angelo Libertini, letter to Svenska Filminstitutet Cinematek-Stockholm, dated 4 December 1992. Prot. no. 9258/2333, CN-Rome.
[63] Inga Adolfsson (Svenska Filminstitutet Cinematek-Stockholm), letter to Angelo Libertini dated 9 December 1992. Prot. no. 9327/2381, CN-Rome.

Eventually, the CN preservation officers made the decision to use all the colour material they had, creating the most 'complete' print, even though the copy they thereby created had never existed and did not correspond to any one shown at the time the film was originally produced. After receiving the English coloured print from the NFTA, Libertini consulted Fleming since CN was experiencing difficulties in reproducing stencil. Interestingly, Libertini was also taking into account three b/w separations, a method in use for reproducing Technicolor on Eastman modern stocks.[64] Anne Fleming answered that 'we have opted for making a colour negative from the nitrate positive, i.e. the simplest route!'[65]

The problems with which CN preservation and technical officers had to deal constitute a crucial point in the restoration project and are worthy of a fuller analysis. Cinecittà International Laboratories, under the supervision of Livio Luppi, the technical manager, and Musumeci from the CN, tried to reproduce stencil colours by means of three different methods: an intermediate negative (the 'simplest route' suggested by Fleming); a camera negative, apparently involving wider exposure range and latitude; and Ektachrome, a special film that directly produces a positive image. After trial and error it was found that only the last of these produced a satisfactory result for a projection, but this did not solve the problem of obtaining a safety negative master, which would come under the preservation policies of the film archives.

Finally Musumeci and Luppi reached a compromise solution, an attempt to reconcile the museological purpose of showing films with the archival purpose of preserving them. They prepared a copy to be projected reproducing stencil colours through Ektachrome, whereas the preservation print included the same part reproduced

[64] Angelo Libertini, letter to Anne Fleming (NFTA-London) dated 22 February 1994. Prot. no. 1878/1588, CN-Rome.
[65] Anne Fleming, letter to Angelo Libertini (CN-Rome) dated 28 February 1994. Prot. no. 2381/796, CN-Rome.

through a camera negative.[66] Conversely, the technique used to reproduce tinted and toned colours was the Desmet method. Even though the final result may have been too even, by comparison with the original tinted and toned film, it seems that there was no better chance for the restorers. The reproduction of the technology of the time the film was made was too costly and – as Luppi said – 'impracticable'.[67] In order to decide on the colours to be reproduced in individual scenes (the original prints differed from one another in colour)[68], Luppi compiled a comparative list of colours, shot by shot, which appeared as a 'chromatic script'.[69]

In his article, Luppi states the principles that informed the choices in restoring the colours of *LDP*. When the colour had the same hue in the different copies, the more saturated version of it was chosen; when the colour was different, the more complex technique was chosen as a reference; when a part was in b/w and restorers were without a reference to the original colours, they chose to reproduce the colour of the preceding or following part of the shot; when an intertitle was in b/w, it was coloured like the other intertitles or the rest of the scene; the English version was almost always preferred, because it was more rich in terms of the range of colours. When the stencilled scene appeared shorter than the corresponding in the Italian copy, the missing frames were added to the restored copy, reproducing tinting or toning for the excess frames. In this way it was possible to distinguish the differences among the prints without the view of the film's flow being interrupted.

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[66] Musumeci reported this in an email to the author (dated 3 January 2008), whereas in his article 'Alla ricerca del testo perduto: il restauro de *Gli ultimi giorni di Pompei*', in *Gli ultimi giorni di Pompei*, ed. by Redi, pp. 107-09 (p. 109), he claims that the restored print was struck from an internegative.

[67] Livio Luppi, 'Il recupero cromatico del film', in *Gli ultimi giorni di Pompei*, ed. by Redi, pp. 111-2 (p. 112).

[68] For instance, the first reel of the Czech print was tinted overall in yellow, whereas the English material was stencilled with different colours.

[69] Alfredo Baldi, a CN preservation officer, rewrote the script, transcribing the dialogue word for word and adding all other details (shots, descriptions, etc.) by watching each scene of the Italian copy. It is worth noting that not only the colours but also the editing of the Italian version are different from the English version, as demonstrated later in this section. See Alfredo Baldi, 'Sceneggiatura desunta alla moviola', in *Gli ultimi giorni di Pompei*, ed. by Redi, pp. 135-76.

This last statement recalls what Cesare Brandi writes in *Theory of Restoration*, with reference to paintings, about the best way to neutralise lacunae in visual works of art. Since 'a gap is an interruption in the figurative fabric' and 'the most serious aspect of a gap for a work of art is not what is missing but what is put inappropriately in its place', the principle of a restoration methodology should be to avoid 'integrations based on fantasies of the imagination' and to restore in such a way that 'one could perceive the continuation of the painting beneath the lacuna'.[70]

Actually, in their work on *LDP*, the film restorers avoided inventing colours that could be only theoretically deduced from the previous stencilled scenes, when there was no evidence of stencil colours, and tried to reproduce the colours by copying them from the Czech print or from the shots that followed, coloured originally through the less attractive tinting technique. By presenting something that could be perceived like a spot in the continuity of the colours the restorers did therefore plug the gap and at the same time rendered it visible.

Another factor that affected the film restorers' decisions was inevitably the money and the time to devote to this project. In fact, in the conclusions of his article Luppi claims that it was not possible to reproduce the old, original techniques to put colour onto the print to project. This was because of the high costs, the enormous amount of time and the difficulties in the preparation of all the technology that would have been needed. It is also worth adding that a commercial laboratory like Cinecittà International usually does not work on early coloured films, but is designed to print hundreds of copies of a film on standard multilayer film stock. In addition, the results of original techniques like tinting and toning gave uneven results and today it is very problematic to reproduce the variable density of the original colours in projection.

[70] Brandi, *Theory of Restoration*, p. 58.

At this point, it is possible to gather together some reflections: generally speaking, beyond the different factors that affect the decisions of the restorers, one should stress the inadequacy of the modern material with which they work to reproduce the original colours.[71] In addition, even if it were possible to reproduce exactly the colours of a nitrate print, it would be the reproduction of already faded colours, not the original shown at the time the film was projected in cinemas. Thus, painstaking restorers would pass down copies that do not reproduce the original colours, but the state of their decay. A better understanding of the states of colours when they began to fade can be the first step towards a more effective method for restoring them.

2.3.6 Not restoring the music

In his article Luppi claims that the colours are a considerable part of a film.[72] It is odd that the music is not considered to be of the same importance. This probably derives from the old misconception about early films being silent. Yet, it is a truism that they were not, since silent films were accompanied by live music, sound effects and sometimes voices reading the intertitles.[73] However, only twenty original scores of Italian silent films have survived, out of a total of 9,816 titles listed by Bernardini.[74] However, it is worth recalling that in early cinema the distinction between music written

[71] At the NFTVA in Berkhamsted I experienced similar difficulties, when I tried to film some parts of the print of *LDP* there through my digital video-camcorder, a Sony PD 150, using a DV-CAM tape. The differences between the colours of the original stencilled nitrate print and the colours in the viewfinder of the video-camcorder were similar but far from being the same. Despite my attempts to correct the white balance and the colour control, it was impossible to reproduce the original film's colours. When I finally gave up I better understood, even though the technical means were different, the difficulties experienced by technicians at Cinecittà International laboratories in reproducing the original colours.

[72] Ibid., p. 111.

[73] Carlo Montanaro, 'Il cammino della tecnica', in *Storia del Cinema Mondiale,* ed. by Brunetta, V, pp. 81-163 (p. 145).

[74] Ennio Simeon, 'L'ambiente musicale ufficiale italiano e il cinema muto', in *Sperduto nel buio; il cinema muto italiano e il suo tempo (1905-1930)*, ed. by Renzo Renzi (Bologna: Cappelli, 1991), pp. 108-14 (p. 109); Aldo Bernardini, *Archivio del Cinema Italiano. Volume I. Il cinema muto 1905-1931* (Rome: Edizioni ANICA, 1991).

for films and music used for films is not negligible, since the composition of an original score was quite a rare occurrence at the time.

In the case of *LDP* there is no positive evidence that can tell us whether the score was an original composition, a piece of repertoire or a patchwork of original and pre-existing pieces. The only hint is in a letter of 1995 from the music critic Ermanno Comuzio, who suggested that the composer of the score may have been Domenico Cortopassi (1875-1961), who wrote mainly music for theatre.[75] In an article published immediately after the première of the film there is a part dealing with the musical comment of the orchestra that favourably reviews the conductor.[76] However, I have recently had contact with a descendant of the Cortopassi family, whose informed opinion is that the actual composer was not in fact Domenico, but his son Marcello.[77] Unfortunately there is no mention of the music played, and likely the score was a cluster of pre-existing compositions, or part of a repertoire without any particular interest. However, given that right from the start this project originated as the proposal of a composer to write a new score for the film, there was not much interest in addressing this issue at the CN. Musumeci himself offered a justification for the lack of interest in continuing the search for the original score.[78] In compliance with the theory of Brandi, he claimed that 'for restoration to be a legitimate operation, it cannot presume that time is reversible or that history can be abolished'.[79] Given that there was no evidence of an extant original score, it was legitimate to let a musician write a new one. Ennio Simeon defends the same opinion in the book published together with the restoration project of *LDP*. In an open historical perspective that includes the *Rezeption* and the *Wirkungsgeschichte* as fundamental elements of the identity of the work, the shift

[75] Ermanno Comuzio, letter to Nedo (sic) (13 January 1995). This is a non-archived letter contained in file R/110/1993/96 at the CN.
[76] Dim (sic), 'Gli ultimi giorni di Pompei', *Grandi edizioni cinematografiche*, 25 February 1926, pp. 1-3 (3).
[77] Email exchange with Massimo Cortopassi, 31 August 2010.
[78] Author's interview with Musumeci, Rome, 23 December 2004.
[79] Brandi, *Theory of Restoration*, p. 64.

between the ideal reconstruction and the real context in which the film was shown is important.[80] The lack of information about the original score, if it ever existed, seems then to provide a coherent justification to commission a musician to compose a score and to add something new to the film.

From the point of view of programming this can be a good point for the institution that organizes and pays the costs of restoring a film like *LDP*. From a 'preservationist' point of view, however, the right of the restorers to add something – which was not in existence when the film was made and shown to the public – is perhaps questionable. It is true that Brandi stresses the impossibility of filling the gap between the time of the work of art and our own. However, this does not mean that restorers are free to do anything just because they are interpreting the moment of their own perception. This way of operating would resemble Viollet-le-Duc's approach to restoration, namely one in which the restorer inserts his or her special intervention entitled 'restoration' into the 'most intimate and unrepeatable phase of the artistic process'.[81] Thus, it seems that this work of restoration as spectacle aimed at reinstating the film 'in a condition of completeness that could never have existed at any given time'.[82] Brandi would have classified this as a 'restoration by fantasy' or a 'restoration by *reperfecting*', in which the restoration is situated 'within the interval between the completion of the work and the present', and thus interferes with the existence of the work of art in time.[83]

Such criticism of this work of restoration may be ungenerous, since Libertini was quite clear in stating the aim of the work on *LDP*, namely a restoration for a major public display. In his presentation he described the restoration work as the search for

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[80] Ennio Simeon, 'La musica per il cinema muto in prospettiva storica e nell'attualità', in *Gli ultimi giorni di Pompei*, ed. by Redi pp. 97-101. About a hermeneutical perspective of film restoration see 4.2.
[81] Brandi, *Theory of Restoration*, p. 63.
[82] Eugène-Emmanuel Viollet-le-Duc, 'Restoring Old Environments: Defining the nature of Restoration', in *The Architectural Theory of Viollet-le-Duc: Readings and Commentary*, ed. by Millard Fillmore Hearn (Cambridge, MA: Massachusetts Institute of Technology, 1990), pp. 269-88 (p. 269).
[83] Brandi, *Theory of Restoration*, p. 64.

and rediscovery of a buried city.[84] This rhetorical assimilation of the restoration of the film to the archaeological excavation of Pompei was good enough for the audience who came in large numbers to witness a special event: a screening of *LDP* in the archaeological site of Pompei itself.

Interestingly, on the subject of the music to use in the restoration of an early film Coppola claims that 'it is not important *what* music one can adopt, but *how* it is used, so that the final result can be a score and nothing more.'[85] Coppola thinks that music is a useful tool to make the projection of the film enjoyable again and not an integral part of it. Nevertheless, his experience as a musician accompanying on the piano the projection of over three thousand silent films put him in the right position to write music that re-interpreted the spirit of the time when the film was made. That is very close to the conception of restoration, cited above, that Viollet-le-Duc theorized over a century earlier. In fact, if a film restorer assumes that to restore a film is not to preserve it, repair it or rebuild it, but rather to reinstate the film 'in a condition of completeness that could never have existed at any given time', it becomes acceptable to create a mongrel or hybrid in which some parts come from one copy, other parts from other copies, and where it is possible to insert something new, such as a new score, into the film for sake of completeness and, above all, to increase the appeal to a modern audience.[86]

2.3.7 The projection of the 'restored' print

The new print of *LDP* was projected in the ancient theatre at Pompei on 9 July 1994 and a 60-piece symphony orchestra plus the chorus performed the new score composed by Coppola. Despite the unavoidable differences between the 'original' film projected at

[84] Angelo Libertini, 'Presentazione', in *Gli ultimi giorni di Pompei*, ed. by Redi, p. 13.
[85] Ibid.
[86] Viollet-le-Duc, 'Restoring Old Environment', p. 269.

the Medica theatre in Bologna almost 70 years earlier and the new one, the show was a great success. The decision to screen the restored film in Pompei itself was an extraordinary publicity gimmick. Evidence of the success of this operation is provided by the good reviews and the requests to have the film for other cultural events.[87] In addition, a significant outcome of the project was the book edited by Riccardo Redi. It collects the interventions of the main people who worked on the project; the most interesting articles are those by Musumeci, Luppi, and Coppola. Unfortunately, there is no document explaining in more detail the interventions of the Cinecittà laboratories or giving technical information on their work. Nevertheless, this version of the film offers a starting point for future restorations or, more simply, for research on the work already done. It is evident that the most important aim for Libertini was to cause a stir about this work and the institution that had supported it.

With this aim in mind, Libertini wanted to present the restoration of *LDP* at a much-publicized event, such as the 51st International Film Festival in Venice. The problem that haunted him was the supposed bad result of the yellow tinted scenes. In fact, during the projection in July he was not happy with the reproduction of this colour. Therefore, he asked the laboratories for a new revised print to project at the end of August in Venice, explaining that the audience would be composed of experts.[88] The answer from Cinecittà laboratories explained that the method to increase the yellow hue could only be a reinstatement of the old technique to tint the print. The attempts to restore the tinted original colours through the Desmet method had been unsuccessful. Actually, Musumeci and Aldo Strappini, a print technician at Cinecittà, ascertained that the problem came from improper projection: some lights installed in the orchestra pit

[87] Paola de Ciuceis, 'Pompei sotto il vulcano', *Diritto allo studio*, 4 (1994), p. 89; letter from Ombretta Pacilio (Ministero degli Affari Esteri-Direzione Generale Relazioni Culturali-Ufficio III) to Angelo Libertini about the 'Rassegna "Cinema d'Europa"' dated 7 December 1995. Prot. no.113/3851 MAE and Libertini's reply dated 14 December 1995. Prot. no.12291/1170segr./4807/st CN.

[88] Letter from Angelo Libertini to Cinecittà laboratories (Rome) dated 27 July 1994. Prot. no. 8308/3561 CN-Rome.

had been reflected on the screen, making the yellow tint paler.[89] This issue reveals the importance of the projection as the final and most important act of a film restoration in terms of appearance. In fact, only through a projection on a screen can the audience watch and appreciate all the visual characteristics of a film, colours included.

2.3.8 Comparing the British and Italian prints

It is not clear whether the reconstruction of the text received as much attention from the restorers as the restoration of the colours. Since the Italian copy was longer than the British and the Czech ones, it was probably the main point of reference used to reconstruct the text. In order to answer this issue I compared the British nitrate print at the NFTA archives in Berkhamsted and the shooting script reconstructed by Baldi from the Italian print before the restoration. This analysis provided information both on the prints and on this work of restoration.[90]

First, in the Italian copy there are seventy-five more intertitles than in the British one. This is partially understandable because in the British print some scenes are missing and there are fewer credits at the beginning of the film, but it is also true that the film was re-edited for foreign markets. Moreover, the style of the Italian intertitles by Panzini is more poetic, whereas the English is more realistic and loses the metaphorical nuances of the Italian text. Second, the editing of several scenes is different. Apart from the scenes in the Italian version with naked women who are clothed in the British print, many shots are missing and the presentation of the characters is inverted in the British print by comparison with the Italian: in the former a character's first appearance is followed by an intertitle with their name or action

[89] Author's interview with Aldo Strappini, Rome, 14 July 2004.
[90] I was given permission to examine the BFI National Archive print at Berkhamsted in July 2006.

whereas in the latter it is the other way round. The link between the shots seems to be more effective in the British print than in the Italian. For example, in the first scene in which Glauco, the main character, looks out of the frame, in the British print the reverse shot presents Giulia, with whom he will fall in love, whereas the Italian print shows Diomede, her father. Thus, the British copy makes clearer the relationship between the two potential lovers and this is more effective.

2.3.9 The costs of restoring

The economic aspect of restoration is often neglected. The costs of a work of restoration generally seem less interesting than its aesthetic, ethical, technical and historical features. Yet financial considerations have a strong impact on the decision to undertake the restoration of a film and then to pursue it among many different technical choices. It is often difficult to access these sensitive data but in the case of *LDP* I was able to look through the account files.[91]

The initial funds allocated for the restoration were 59.5 million lire (about €30,870).[92] Over two years the cost doubled to almost 128 million (€66,106). Musumeci explains the increase primarily by the need to use more complex (and costly) procedures than had been initially envisaged to reproduce the original colours, which involved many preliminary trials and experiments. Actually, the opportunity to restore the colours of some parts of *LDP* occurred only when the work was already in progress. Ironically, the restoration of the film seems to have followed the same fate as its production: in 1926 Amleto Palermi needed 7 million lire to complete the film, whereas

[91] Mario Musumeci kindly provided me with his file 'Gli ultimi giorni di Pompei', R/110/1993-96 (Rome), archived at the CN-Rome.
[92] Ordinance no. 45cs/93 by Libertini.

the original budget had been only 3 million.[93] Just as the cost of making this film had increased during production, so did the cost of preserving it.

Generally speaking, the expenses for restoring a film are quite high (compare the restoration costs for *Cabiria* in the next section of this chapter). This is why the institutions tackling a work of restoration generally choose famous films that can justify their efforts. What remains to be asked is whether the copyright holders should pay for the restoration instead of a public film archive or a private benefactor.[94]

2.3.10 Documentation and reversibility

While it is possible to retrace the economic enterprise of the restoration of *LDP*, there are no technical documents about it. The concept of reversibility implies that 'conservators should be able to reverse all conservation treatments and return an object to its original appearance and chemical and physical condition before treatment.'[95] In this work of restoration – as for most of the other case studies examined hitherto – it has not been possible to find technical documentation of all the acts of restoration (e.g. grading and colour densitometric evaluations). In addition, there is no record of the choices that the CN made in comparing the different versions of *LDP*. It was with the intention of bringing more consistency to the ways film restorers describe their work that the European Gamma Group proposed and tested, during the restoration of *Menschen am Sonntag*, an Excel spreadsheet document showing a comparison of the different versions of the film.[96]

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[93] Ghione, 'Gli ultimi giorni della cinematografia italiana', in, *Gli ultimi giorni di Pompei*, ed. by Redi, pp. 27-34 (p. 34).
[94] On the costs of restoring a film see Cherchi Usai, 'La cineteca di Babele', pp. 1040-43.
[95] Richard D. Smith, 'Reversibility: A Questionable Philosophy', in *Reversibility: Does It Exist?*, ed. by Andrew Oddy and Sara Carroll (London: The British Museum, 1999), pp. 99-103 (p. 99).
[96] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 238.

Documentation is closely related to the concept of reversibility.[97] In fact, the possibility of rethinking a restoration/reconstruction of a film – understanding the historical, aesthetical, ethical and practical reasons for the interventions – rests on the records of the work already done. Conversely, the concept of reversibility remains vague and, in spite of the theoretical statements of intent, not really fulfilled in practice.

2.3.11 Conclusion

At the end of the restoration work on *LDP* Mario Musumeci listed the outcomes: three colour prints of *LDP* with Ektachrome (reversal) inserts reproducing the stencilled scenes; a colour print of the film with stencilled scenes reproduced by a duplicate colour negative (internegative); a duplicate black and white negative of the nitrate tinted print from Vienna; a duplicate black and white negative of the tinted and stencilled print from Berkhamsted; a duplicate colour negative of the stencilled first reel of *LDP* from Berkhamsted; check prints reproducing stencilled scenes printed from a duplicate colour negative.

Clearly, the three prints in which scenes reproduced by Ektachrome were inserted had been made only for the purpose of exhibition – the 'museological purpose' – regardless of any other consideration of preservation (see 1.1 above). The other print, made from an internegative, had an 'archival purpose', since it constituted a new matrix from which it was possible to print other copies and met the aim of preserving the film.

To conclude, even though this work of restoration can be considered a hybrid, containing different elements that never co-existed at the time of its original production, such as the new score, it enabled *LDP* to be distributed and shown, and this marked a

[97] About the claim of documentation see Ibid., p. 78.

new stage in the history of the film. Since 1994, critics have dealt with this version as if it were the ‘original’, without having had the opportunity to consult the technical documents recording how it was created.

2.4 *Cabiria*: a twofold restoration. From the spectacular to the research restoration

In this last section I analyze a case of restoration that is more complex than the three preceding ones. Here the aim was to reconstruct two different versions – silent and sound – of the same film. In 2005-6 João de Oliveira, the restorer in charge of this work analyzed and mixed different versions of *Cabiria*, adopting a more careful philological approach than had been used in the previous attempt at restoration of the film in 1995. Using Giovanni Pastrone's personal 1931 copy, and recovering the original soundtrack recorded on shellac discs, de Oliveira located the parts that Pastrone had shot and then joined together with the 1914 version to synchronize them with the new score and to impress the later audience. I shall also discuss the question of sound and music in greater depth here than in 2.3, both from the technical and on the theoretical point of view, since de Oliveira sought in this case to adapt the modern technology to the original sources, using a modern turntable to play the 1930s Bixiophone discs. Finally, I shall consider the issue of museological versus archival criteria, assessing in particular the first outcome of this restoration: a screening in the same theatre in which the premiere of the silent version had taken place almost a century earlier.

2.4.1 The historical context

In 1914, on the eve of the First World War, Giovanni Pastrone produced and directed *Cabiria*, one of the most celebrated and successful ancient world films of that time. It established Italy, if only temporarily, 'as the leading figure in the international film market'[98]. The plot recounts the vicissitudes of a young girl kidnapped from Catania

[98] John David Rhodes, '"Our Beautiful and Glorious Art Lives": The Rhetoric of Nationalism in Early Italian Film Periodicals', *Film History*, 12 (2000), 308-21, p. 319.

during the second Punic War, when Rome defeated Carthage and conquered North Africa.

The historical background of the film seems to be linked to the Italian colonial politics of the time (Italy had seized Libya from Ottoman control in the Italo-Turkish war of 1911-12), although there is not a clear consensus on this among historians. However, between the first silent version of the film and the sound edition made by Pastrone, released in 1931, Mussolini took power, establishing the first Fascist-led government and a single-party regime, and by the 1930s he was starting to develop an aggressive foreign policy. The sound version of *Cabiria* does seem to make more explicit references to the politics of the period. In the 1931 version Pastrone, for instance, inserted a shot representing a hand making the Fascist 'Roman salute'.

In an era in which the question of whether the cinema could be considered a new form of art was being debated, Pastrone adopted a successful marketing strategy aimed at adding cultural prestige to his film. He convinced Gabriele d'Annunzio, the most prominent public literary figure in Italy at the time, to take part as a writer in the production of *Cabiria*.[99] Though d'Annunzio's role in the project is still the object of discussion, his fame enriched the film with an aura of literary prestige; indeed at the time his well-publicized involvement eclipsed the film's cinematic qualities and Pastrone's innovations.[100] In the meantime, in order to have an original soundtrack for *Cabiria*, Pastrone entered into a contract with composer Ildebrando Pizzetti, who had been suggested by d'Annunzio. In addition, Pastrone adopted a large-scale and revolutionary system of advertising and distributing the film.[101]

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[99] See *Cabiria*, ed. by Roberto Radicati and Ruggero Rossi (Turin: Museo Nazionale del Cinema di Torino, 1977), p. 197, and Fausto Montesanti, 'Pastrone e la Duse: un film mai realizzato', *Bianco e Nero*, XIX (1958), 229-34, now reproduced in *Cabiria & Cabiria*, ed. by Silvio Alovisio and Alberto Barbera (Turin: Museo Nazionale del Cinema and Milan: Il Castoro, 2006), pp. 332-334 (p. 333).

[100] See Antonio Costa, 'Cinema e letteratura nel muto italiano: Dante, D'Annunzio e Pirandello', in *Sperduto nel buio* ed. by Renzi, pp. 59-69, and Redi, *Cinema muto italiano*, pp. 141-2. For a more recent discussion of this topic see Silvio Alovisio, 'Il film che visse due volte: *Cabiria* tra antichi segreti e nuove ricerche ', in *Cabiria & Cabiria*, ed. by Alovisio and Barbera pp. 15-53 (pp. 22-4).

[101] For a detailed report on this subject see Chiara Caranti, '*Cabiria* 1914 & 1931: la distribuzione in

D'Annunzio's intertitles were in a highly poetic style that was sometimes difficult to understand. This was probably one of the reasons why Pastrone produced a 'libretto di sala' – the program distributed during the Italian première – containing the printed intertitles. In fact, this practice was common in screen melodramas and it demonstrates Pastrone's intention of assimilating the film to a stage play, a 'high' form of art, at a time when film was widely regarded as a 'low', popular form of entertainment.[102]

The production of *Cabiria* cost one million lire, three or four times what would have been the average cost of a multi-reel film at the time, though no film reached a similar length at that time.[103] After Italy entered the First World War in 1915 it was no longer possible to invest so much capital and Pastrone was forced to abandon his next project, for a biblical film, which entailed huge investments.

Cabiria met with huge success abroad as well as at home. This is confirmed among other things by the enthusiastic review by Stephen Bush in June 1914 who defined the film as a masterpiece of the art of cinema and cited *La caduta di Troia* (*The Fall of Troy*), produced by Itala Film four years earlier, as evidence of the progress the production company had made.[104]

Italia e nel mondo', in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 148-73.

[102] On the relations between early Italian cinema and literature see John P. Well, 'Film on Paper: Early Italian Cinema Literature, 1907-20', *Film History*, 12 (2000), 288-99.

[103] Riccardo Redi quotes this figure taken citing Jacopo Comin, 'I Film', *Bianco e Nero*, I (1937) quoted in Redi, *Cinema muto italiano*, p. 66. Maria Adriana Prolo, 'Introduzione', in Cabiria, ed. by Roberto Radicati and Ruggero Rossi, pp. 5-16 (p. 7) reports about L. 50.000 as the sum to produce a film earlier than 1914. Alberto Barbera echoes the costs reported by Prolo in his article 'Doppio sogno' in, *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 11-4 (p. 12).

[104] Slide, *Silent Topics*, p.108. Also in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 402-3.

2.4.2 The first quest for the original 1914 version

As early as 1920 the journal *Moving Picture World* suggested that *Cabiria*, along with a few other feature films, was worthy of being preserved in a museum of films, saying that 'such a collection would be of vast interest a quarter of a century from now'.[105] Ironically, seventy years later, Paolo Cherchi Usai wrote an article whose title refers to the loss and the quest for the original 1914 Italian silent version of *Cabiria*.[106] The sound version of 1931 was shorter than the silent surviving prints. Pastrone had cut some shots from the original version and appeared to have filmed a number of new ones. Unfortunately, the original silent negative from 1914 no longer exists, since in 1966 the laboratory of the Salesiani in Turin used it – already cut and re-edited by Pastrone – in order to strike a new print of the sound version at the request of Maria Adriana Prolo, founder of the Museo Nazionale del Cinema di Torino (hereafter abbreviated as MNCT). After this, the MNCT lost all trace of this negative. Thus, the most important copies of the film were the sound reissue that Pastrone himself had given the MNCT and the print in the Salesiani's possession, a little longer and better than Pastrone's. For this reason the print struck by the Salesiani's laboratory was the reference copy for the reconstruction of both the silent and the sound versions.

Cherchi Usai argued in 1988 that it was necessary to make a comparative analysis of the seventeen surviving prints *Cabiria*, 'some complete, some not, all of them scattered in various of the world's film libraries'.[107] At the same time, he corroborated the hypothesis that Pastrone had made some changes in editing the narrative structure of the sound version, in which he credited himself as Piero Fosco. Analysing the 16mm print held at the Museum of Modern Art in New York (an

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[105] The article 'Why Not a Film Museum?', *Moving Picture World* (11 September 1920), p. 180, is quoted by Bottomore, 'The Sparkling Surface of the Sea of History', p. 89.
[106] Cherchi Usai, '*Cabiria*, an Incomplete Masterpiece', p. 160.
[107] Ibid., p. 158.

American re-issue, released in 1921), although 'it was a black-and-white abridgment with very poor contrast and even poorer fidelity to the structure of the original', Cherchi Usai found at least two shots in it that were not included in the 1931 sound version and in no other prints he had seen before: a shot in the sequence of the eruption of the volcano, in which the ground opens under the inhabitant's feet, and one of the naked Cabiria, the young girl who is going to be thrown into the flames of Moloch, held by two hands.[108] (Fig. 2.9) One can only speculate on why Pastrone cut these shots: the first was a special effect that may have looked dated in 1931; the second was probably too risqué for the sensibility of the censorship of the time. The latter shot in particular deserves a closer examination. A famous poster, used as publicity for the film in 1914, reproduced the image of the sacrifice with the naked Cabiria.[109] (Fig. 2.10) The evidence that this scene was in the silent version comes from the consideration that 'all the advertising graphics for *Cabiria* were based on specific shots in the film' and from the American 1921 print.[110] Since this scene is missing from the 1931 version, the only reliable and 'authorized' version, Cherchi Usai believes that it might have been a part which required synchronization with the original score by Pizzetti. Unfortunately, the 2006 work of restoration seems not to corroborate this hypothesis that could solve a vexed question approached later in this section: the employment of the *Symphony of Fire*, lasting eleven minutes, in the silent version of the film.

[108] Ibid., p. 160.
[109] Redi, *Cinema muto italiano*, p. 136.
[110] Cherchi Usai, '*Cabiria*, an Incomplete Masterpiece', p. 162.

Fig. 2.9 The naked Cabiria about to be thrown into the flames of Moloch, held by two hands. The frame is taken from the silent version reconstructed by João de Oliveira (2005) now preserved in the MNCT

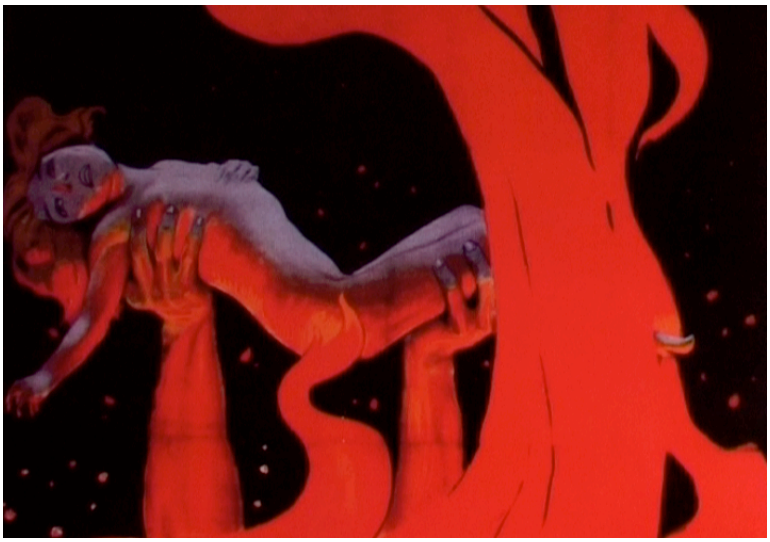

Fig. 2.10 The publicity poster for *Cabiria* in 1914, by Leopoldo Metlicovitz, preserved at the MNCT, reproducing the image of the sacrifice with the naked Cabiria

2.4.3 The first interventions: 1966, 1977 and 1995

Since 1966 *Cabiria* has been the object of preservation. It was in that year that the MNCT asked the print laboratory of the Salesiani in Turin to make a copy from the original 1914 negative, after which the negative disappeared. It was probably already

worn because of the many prints struck from it. In 1977 – thanks to Prolo – the 1931 nitrate print was duped and printed without the soundtrack onto 35mm safety film. On this occasion a book was also produced, most of which consists of a photographic storyboard documenting the film shot by shot with Italian intertitles, number of frames, duration and colour of each shot.[111]

The last work of preservation before that of 2005 took place in 1995, on the occasion of the centenary of the birth of cinema, as an attempt to reconstruct the 1914 silent version inserting all the material obtained from different copies (Museum of Modern Art, Cinémathèque Française, Gosfilmofond in Moscow, National Film Archive, Cineteca Nazionale) into the 1931 print preserved in the MNCT.[112] The principle that inspired this work was completeness, but from a textual point of view the result is controversial. In fact, Alberto Barbera, the present director of the MNCT, describes this intervention as important but not very accurate since the end result is substantially hybrid: it is neither the 1931 sound reissue nor the 1914 silent version.[113] The assumption was that Pastrone had probably cut some shots in 1931 himself for the sound reissue of the film. A recurring sign, a triangle, made by scissors on the film and the comparison made by the restorers with the original nitrate frames cut in the sound version by Pastrone confirmed that they were the heads and tails of the original shots (1914) partially shortened because of the new editing (1931).[114] In order to reconstruct the *ur-Cabiria*, these cuts were reinserted, whereas a number of scenes that Pastrone had apparently shot in 1931 for the reissue of the film were not eliminated. This is the reason for Barbera's critical opinion. For the sake of completeness, one of the missing shots contained the famous image of Cabiria in the hands of Karthalo. Another inaccuracy makes the 1995 restoration open to criticism today: in an attempt to

[111] *Cabiria,* ed. by Radicati and Rossi.
[112] Roberta Testa, 'Cabiria: il restauro 1995', in *Il restauro di 'Cabiria'*, ed by. Sergio Toffetti (Turin: Museo Nazionale del Cinema di Torino/Lindau, 1995), pp. 32-8.
[113] Author's interview with Barbera, Bologna, 4 July 2006.
[114] Testa, p. 33.

reconstruct the colours of the film (tinting and toning) more accurately, the MNCT entrusted the Hage Film laboratory in Leyden (Netherlands) with the task. The work was technically good, but the colours of 1931 were in effect different from those of the 1914 print, as was ascertained in the 2005 restoration (Fig. 2.11 and 2.12).

Fig. 2.11 The detail of Croessa's ring in the 1931 version of *Cabiria*. This image may be compared with the same frame in the 1914 silent version, which has a different colour.

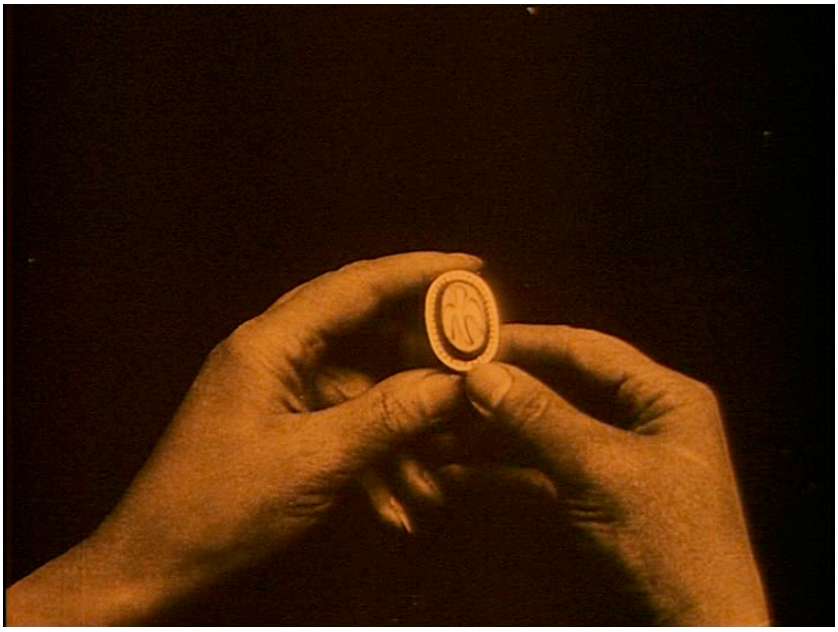

Fig. 2.12 Croessa's ring in the 1914 silent version of *Cabiria*.

In conclusion, the criterion of completeness is evident from the painstaking count of the restored film length (3343 m.) compared with that of the most complete available print hitherto (3132 m.) and that stated in the original censorship document (3364 m.). However, these data can prove useless without further analysis of other elements of the film, such as the shadow of the original perforation on the edge, which shows what comes from the 1914 version and what Pastrone shot in 1931. At the same time, important information deriving from the colour storyboard produced by Pastrone himself might have helped to avoid mistaken reproduction of colours.[115] However, the 1995 restoration was very important because it provided an occasion to catalogue the material in the MNCT's possession, to collect different copies of the film and to produce a good piece of research on it, the outcomes of which included a book with documentation about the restoration. Moreover, when *Cabiria* was presented on 29 September 1995 at the Teatro Regio in Turin it attracted attention both to the film itself and to the cinema industry in Turin.

2.4.4 The 2006 restoration: costs and marketing strategy

The aim of the 1995 intervention had been to reconstruct the 1914 silent version of *Cabiria*. The reasons for restoring *Cabiria* again just ten years later were that the MNCT had acquired new documents from the Pastrone family, other sources had become available, including a print from the Filmoteca Española in Madrid, and digital technologies had greatly advanced.[116] On the basis of this new documentation and with the help of the new sources, de Oliveira aimed not only to reconstruct the 1914 Italian silent version of *Cabiria,* but also to restore the 1931 sound reissue.

[115] On this issue see Alovisio, pp. 23-4.
[116] On the discovery of the new documents on *Cabiria* see Alovisio, pp. 17-24.

The titles at the beginning of the screening listed Martin Scorsese as the host and promoter. A video presentation of Scorsese speaking directly to the audience preceded the première of the sound version at the Teatro Massimo in Turin on 21 March 2006. This obvious marketing strategy in a way follows Pastrone's own strategy involving d'Annunzio, although it is somewhat ironic that *Cabiria* should now need the support of a film director to confirm its artistic importance. Scorsese's presentation appears to give it (the restored print) the aura of a new entity, almost a new work of art created by the team of restorers, scholars and researchers. Justifiably, Barbera says that a new sensitivity in the field of film restoration has now become apparent, maybe also in the less educated audience. The work of restoration is more and more often considered the creative aspect of renovating a film. Significantly, Wikipedia presents the last restoration of *Cabiria* (2006) as a remake of the film.[117] The high costs of this operation make fundraising particularly strategic and the involvement of an important figure like Scorsese is clearly part of this strategy.

In fact this seems to be the most expensive restoration with which the MNCT has been involved. Barbera claims that the project was beyond the means of the MNCT alone. Its total cost, €500,000, paid for the restoration of both the silent and sound versions, the copies for projection and the masters for preservation, the production of an impressive book containing a large number of critical essays on *Cabiria* and, finally, two public screenings in Turin, at the Teatro Regio and the Cinema Massimo. The first screening was especially costly due to the presence of a live orchestra conducted by Timothy Brock with ninety musicians and eighty singers.[118]

[117] <http://it.wikipedia.org/wiki/Giovanni_Pastrone> [accessed 4 September 2010].
[118] Author's interview with Barbera, Bologna, 4 July 2006.

2.4.5 Film and extra-filmic material

Cabiria was released in many different versions: one for the Italian, others for the international markets. De Oliveira used five of them for the restoration, even though their photographic quality varied greatly, due to the technical circumstances when they were originally produced: a 35 mm b/w Spanish version from the Filmoteca Española, a 35 mm b/w Russian one from the Gosfilmofond, a 16 mm b/w American version from the MoMA, a print from the Hungarian Film Archive in Budapest, and the 35 mm coloured sound Italian version of 1931, given by Pastrone to the MNCT. The 1966 35 mm coloured Italian print produced by the Salesiani and a working print from the 1995 restoration were used as other references.[119]

The most important new extra-filmic materials to which de Oliveira was able to refer were two colour charts (1919, 1931) with the first and the last frame of each single shot, the lists of scenes directly associated with them, and the storyboard (1931), which were useful tools for establishing with certainty the colour of each scene and the edits. In addition there were the well-organized production documents in which Pastrone had listed all the shooting requirements. The available prints were – as primary sources – the tinted print sound version (1931) given by Pastrone to MNCT and – as secondary sources, b/w prints from the Cinemateca Española (these had not been available in 1995), from Gosfilmofond, the MoMA and the Hungarian Film Archive. [120]

In his article de Oliveira clearly states the aim of the restoration: given that, despite the documents and material recently acquired by the MNCT, it was not possible to reconstruct the original 1914 Italian distribution version, it was at least feasible to reconstruct an 'authentic' print, namely a copy that had been released and shown to an

[119] For a detailed list of the sources for this work of restoration see also João de Oliveira, 'Cabiria, una nuova sfida per il restauro', in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 54-61.
[120] Cherchi Usai reports that in 1988 seventeen prints (most of them reprints of the Turin 1931 version) were in circulation. Instead during the restoration nineteen prints came up from the FIAF archives. See Cherchi Usai, 'Cabiria, an Incomplete Masterpiece', p. 158.

audience.[121] Actually, the meaning that de Oliveira gives the term 'authentic' seems slightly different. He is in fact careful not to suggest a false result of his work – namely an equivalent of the Italian print of 1914 – and he stresses that all his efforts were aimed at a realistic and correct goal: to reconstruct a copy as close as possible to the 1914 print, taking into account the primary source (the 1931 Pastrone copy) as a comparative text. Yet, even if the comparison of the sound version with the other prints was very interesting and useful in order to better understand how Pastrone worked and which decisions he made in editing and colouring the shots, it was less useful in reconstructing the silent version. Since *Cabiria* was released in many versions (at least in 1914, 1921 and 1931) and in all continents, one of the most challenging tasks was to identify reliable sources with which to reconstruct the film both as a text (the editing) and as a figurative work (the original colours, definition and contrast of the image). De Oliveira claims that the most important print is arguably the Russian one, because, even if it is difficult to date it, it was produced and put on the market before the Bolshevik revolution in 1917.[122] This makes the Russian print the most representative copy for the foreign market because it is probably the oldest copy in existence. The other prints were useful, however, for the reconstruction of the film. The American one is from 1919-20 and Pastrone himself 'intellectually' produced it: the evidence is the storyboard and the paperwork of the author, who prepared this edition for the American market.[123] It was also useful to compare the Spanish print with the corresponding storyboard, one of the new documents acquired by the MNCT.

Interestingly, in making a new sound version of *Cabiria* in 1931, Pastrone used the original negative of the 1914 silent edition. This is confirmed by three pieces of evidence to be found in the image: first, the aperture plate of the film camera used to

[121] De Oliveira, p. 56. For a critical discussion of the term 'authentic' see 1.3 above and Cherchi Usai, 'Cabiria salvata dalle fiamme', *Segnocinema* (2006), 72-3 (p. 73).
[122] Author's interview with João de Oliveira, London, 28 July 2006.
[123] Ibid.

shoot in 1914 had easily recognizable corners, rounded off with a large radius. (Fig. 2.13)

Fig. 2.13 A frame from *Cabiria*: the corners of the frames are rounded off with a large radius. [124]

Second, on the sound version – printed with four perforations per frame on each side – it is possible to detect on the edges of the film two black shadows (one on the left and one on the right for each frame), the traces of the original negative perforations (probably provided by the producer himself, as was quite common in the film industry of the time).[125] (Fig. 2.14)

[124] See also de Oliveira, p. 58.
[125] Pastrone patented a method to stabilize the projection and to avoid the staggering of the images on the screen through a device that made the perforations perfectly equidistant. See 'Vita laboriosa e geniale di Giovanni Pastrone', unsigned contribution in *Giovanni Pastrone: gli anni d'oro del cinema a Torino*, ed. by Paolo Cherchi Usai (Turin: UTET, 1986), p. 43.

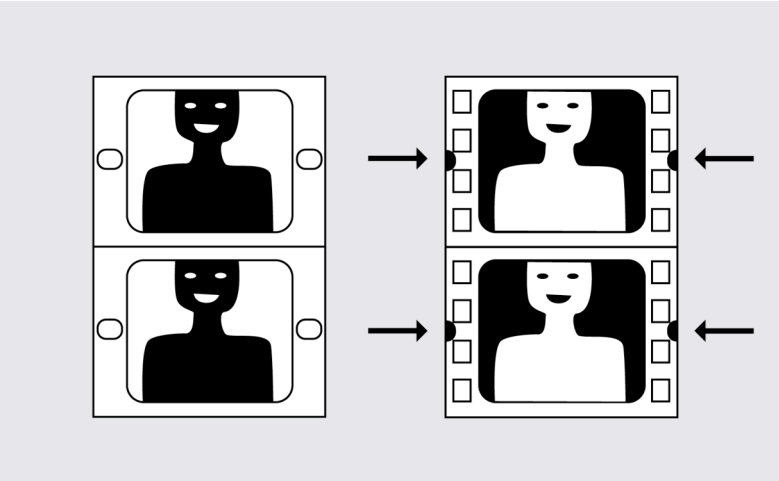

Fig. 2.14 The illustration on the left reproduces the image of a possible original negative from 1914; the one on the right reproduces the version printed in 1931. (Author's drawing)

Third, the capital letter 'A' of Agfa, the film stock used in some shots and intertitles, has flat tops. This indicates that the film stock was produced after 1923, since in that year the company changed the graphic form of its logo.[126]

Different pieces of evidence that can be detected as internal to the images are the editing of the scene in the temple of Moloch and the granular structure of the film stock. In this scene of the 1931 version there is a tracking shot: the camera moves through the people praying in front of the statue of the divinity. The chant of the high priest and the chorus interrupt this movement, which then starts again at the end of the invocation. If one removes the singing of the high priest and the chorus, it is possible to join the start and the end of the track perfectly, reconstructing the previous camera movement. This scene of the singing is not in the copy that the Salesiani printed in 1966, which was probably struck from the original 1914 negative.

The granular structure of the original film is very clear, corresponding to a low sensitivity Pathé orthochromatic film stock (i.e. sensitive to blue and green, but not to red). Instead, the 1931 copy was printed on an Agfa panchromatic film stock (i.e. one sensitive to all colours, red included), which also had a different granular structure. The

[126] See Brown, *Phisical Characteristics of Early Films*, p. 45.

presence of the shadow on the edges of the 1931 print was very useful for indicating some framings of the film that Pastrone shot after 1926, when the production of panchromatic film stock started. More precisely, Cherchi Usai notes that years before, while examining a print preserved at the CN, he had noticed a possible hint to date some scenes shot after 1914: in fact on the edges of the scene of Moloch in the sound version of *Cabiria* he found the mark of Agfa panchromatic film, whereas the film stock used in 1914 had been orthochromatic.[127] Moreover, the lip synch of the chorus and the baritone singing in the scene of Moloch does demonstrate that Pastrone shot this scene for the sound version. A scene like this, with a baritone and a chorus singing for three minutes, would be inconceivable in a silent film without the accompaniment of music in synch.

2.4.6 Restoring the colours of both versions

The two colour-charts (from 1919 and 1931), although of little use in reconstructing the order and duration of each single shot, were decisive in determining the colours in the restored copy. For the first time it appeared clear that the colours of the silent version of the early 1920s were different from those of the 1931 sound version. Silvio Alovisio confidently claims that there is no reason to doubt that the 1921 version was different from the 1914 one, whereas de Oliveira is much more cautious. He attempts to date the colour chart from the edge codes of the frames and then uses this document to reconstruct the colour of the silent version.[128] Undoubtedly, this older colour chart is useful as a term of comparison with the colours of the 1931 sound version. De Oliveira put forward the hypothesis that Pastrone changed the colours in the sound edition

[127] Cherchi Usai, 'Cabiria salvata dalle fiamme', p. 72.
[128] De Oliveira, p. 54.

because the techniques for colouring films had changed in the previous ten to fifteen years.

However, the reason for this change of colours in the two versions might be not only technical, but also narrative. Pastrone might have used the new technology to achieve greater realism. For instance, in the silent version the scene with the blaze of the Roman ships was entirely coloured in red, whereas in the sound version it is in pale orange: this gives a more vivid sense of the fire itself. In other cases the pre-tinted film stock seems to have been a limitation: in the scene of the eruption, for instance, a flash illuminates the woman who looks outside and consequently the colour of the shot changes from blue-grey to red as if there had been an explosion. The same shot in the sound version is all red without any change of colour since pre-tinted film stock did not make it possible to change colour within the same shot. As a consequence, the scene seems to lose part of its narrative appeal, given that nothing suggests to the audience what is happening outside the window.

Although de Oliveira printed the new copies of *Cabiria* on a modern film stock (Kodak 37 2005), different from the original, he tried to imitate the original effect on the screen (i.e. the appearance of the film). He did not imitate the colours with the naked eye, merely trying to match them with the result of a new film stock. He filtered the images, giving colours that would produce coloured images on the screen as faithful as possible to the original versions. This is different from the criterion used in Augustus Color during the restoration of *Maddalena Ferat* or *L'Errante,* or in the first attempt to restore *The Last Days of Pompei*. In these cases the technicians tried to match the colours of the original prints with the new tinted colours with the naked eye, in spite of the fact that the original colours had faded or altered over time. The attempt to reproduce the colours of the nitrate prints without considering the passage of time was consequently mistaken.

2.4.7 The 1914 print and the question of the *Fire Symphony*

In February 1914 Ildebrando Pizzetti, wrote the *Sinfonia del fuoco* (hereafter *Fire Symphony*) for *Cabiria*. He was a talented Italian composer from Parma, with a traditional musical background. He was intended to have been the other column, together with D'Annunzio, with which to support the idea that a film could be not only a popular form of entertainment but also a work of art. Unfortunately, his relations with Pastrone were not cordial and, a few days after signing the contract, Pizzetti broke it: he thought that cinema was not art and he was concerned that he was being distracted from another composition (*Fedra*) for which he had great expectations. In addition he was concerned that, after the premières in the most important cities, his music would not be played by a full orchestra with a chorus. Only the vigorous intervention of D'Annunzio made him resolve to compose at least one piece of music for the film, the *Fire Symphony*.[129]

The question that arose during the restoration was how Pastrone had used this piece of music: it lasts only eleven minutes, considerably less than the total duration of the film and yet very short for a symphony. The hypothesis was that the so-called *Fire Symphony* was just a symphonic and vocal piece that Pizzetti had composed before passing the entire work to his pupil Manlio Mazza, who wrote most of the score. It seems that the *Fire Symphony* was intended to accompany the scene in which the priest of Moloch sings with the chorus before the sacrifice to the god, but that scene lasts only three minutes and it does not fit with the *Fire Symphony*. Recent studies have highlighted that Mazza's score is basically not really original and is closer to a

[129] Ildebrando Pizzetti, 'La musica e il film', *La Rassegna musicale*, 20 (1950), 291. On the same issue see the detailed report by Alovisio, p. 28 and the essay by Roberto Calabretto, 'Le musiche di *Cabiria*: la partitura del 1914 tra equivoci e malintesi', in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 232-9.

compilation from classical compositions.[130] However, Mazza's annotations in the margins of the sheet music clearly indicate that music was subordinate to the image on the screen.[131] This means that only three minutes of music were necessary to match with the scene and it is difficult to imagine how was it possible to use Pizzetti's music here, which lasted eleven minutes. Even more intriguing is the fact that there is no intertitle introducing the *Fire Symphony* in the silent version of the film. The most plausible hypothesis that arose during the restoration is that Pizzetti's music was performed before the show and was conceived as an element of a heterogeneous entertainment divided into different parts. The performance of the *Fire Symphony* by the orchestra and the chorus at the beginning of the show might suggest that some metaphorical images of fire were projected on the screen, without any reference to the plot.[132] Actually, in 1946 Pizzetti himself claimed that this piece of music was 'completely autonomous, independent from the film'.[133] However, Calabretto speculates that Pizzetti's symphony was sometimes played at the beginning of the film, sometimes during the scene of Moloch.[134] Perhaps, this second hypothesis follows a different interpretation of the written communications (letters and telegrams) between Pastrone and Pizzetti. In fact, Pastrone asked Pizzetti for a *reduction* of the symphony, but Calabretto claims that the reduction concerned only the number of musicians and the elimination of the chorus.[135] The reason would be only in order to make feasible the performance in the small theatres. Instead, de Oliveira speculates that the reduction of the symphony was necessary to fit the duration of the scene in the temple of Moloch. Unfortunately, the only evidence available on this question is conflicting. If we examine chronologically

[130] For a detailed analysis of the orchestral score see Ermanno Comuzio, 'Le musiche di *Cabiria*: da Pizzetti-Mazza ad Avitabile-Ribas', in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 243-62.
[131] For the data of this analysis I have drawn extensively on de Oliveira's article in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 54-61, to which I myself contributed.
[132] Pizzetti claimed that he never watched *Cabiria* and did not hear the playing of his *Symphony of Fire* (in Calabretto, p. 232).
[133] Ildebrando Pizzetti, 'Musica necessaria', in *Bianco & Nero*, 8 (1949), p.5, quoted in Calabretto, p. 240, note 11.
[134] Calabretto, p. 239. See also Alovisio, p. 33.
[135] Calabretto, p. 241.

the articles and reviews of the time, just after the premières in Turin, Milan and Rome, we find that they mostly indicate, with different degrees of certainty, that the orchestra and the chorus performed the *Fire Symphony* before the screening.[136] In some reviews, however, it seems that Pizzetti's music was played together with the scene of Moloch in the second episode.

However, Alovisio adduces further evidence to demonstrate that the *Fire Symphony* did not accompany the scene of the sacrifice: he reports that there is no intertitle introducing this part of the film in the censorship documents, or in the programme distributed during the Italian première, whereas the intertitle 'Sinfonia del fuoco. Maestro Ildebrando da Parma' appears in a list of intertitles presumably datable as part of an intermediate version (1921?).[137] In any case, although de Oliveira is tentative in considering when the music of Pizzetti was played at the première, he asserts that Pastrone could have had a flexible approach in how to utilize it. Given that most of the evidence seems to indicate that the orchestra and the chorus performed the *Fire Symphony* before the projection of *Cabiria* (at least during the première in Turin), de Oliveira consequently decided to show the film with the *Symphony* as an overture to the newly restored print in 2006.

2.4.8 The 1931 sound version

Despite a negative review by Louis Delluc, who in 1920 considered *Cabiria* 'a sum of all mistakes of the old Italian cinema, a relic of a superseded genre no longer favoured by audiences', Pastrone proceeded to devise a new sound version of the film, released in

[136] All the following articles quoted here are from a collection of the press notices published in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 383-420.
[137] Alovisio, p. 23.

1931.[138] The reason for this decision has yet to be properly investigated. It is likely that new possibilities of sound-on-film technology gave Pastrone the idea to make a further commercial exploitation of his masterpiece, of which he still held the copyright in 1931. Certainly, Pastrone had a strong business sense, but the situation of the film-market in Italy might be another reason that persuaded him to re-edit *Cabiria*. As described in the section on *LDP*, in the 1920s the production of Italian films dropped dramatically, whereas the demand for films to exhibit was steadily increasing.

In April 1931, when the screening of *Cabiria* took place in Milan at the Odeon, optical sound (Movietone) was already in existence.[139] At the same time sound-on-disc systems had also been developed to synchronize sound with film and, among them, Vitaphone seemed to be the best in 1926: it consisted in projecting films coupled with discs of 404 mm diameter turning at 33.3 revolutions per minute. In Italy, when the first projections of films with music and images in synch took place (e.g. *La Canzone dell'Amore*, directed by Gennaro Righelli in 1930) the production companies promoted them, even though only a quarter of the cinemas in existence in Italy at the time (450 on 2000) were wired for sound films. Nevertheless, it became quite usual in Italy between 1930 and 1931 to put old silent films on the market after adding a soundtrack.[140] In 1931, when Pastrone reissued *Cabiria*, cinemagoers in Milan had the possibility of choosing among different kinds of films: silent, sound but not synchronized, sound and synchronized. Pastrone's choice to utilize a sound-on-disc system in order to add a soundtrack to *Cabiria* came from the need to comply with the speed of silent film, by then standardized at 16 fps instead of the 24 fps required by films with an optical soundtrack, otherwise the running speed would accelerate the motion seen on screen and compromise the acting making it look unnatural. This is why Pastrone, using the

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[138] Louis Delluc, 'Cabiria', *Journal du Ciné-club* 2 (1920), quoted in Brunetta, *Storia del cinema italiano,* p. 177.
[139] Montanaro, p. 146.
[140] Paola Valentini, 'Il sistema Bixiophone', in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 263-71 (p. 271, note 16).

fairly obscure Italian Bixiophone system, chose a compromise: a film running speed of 20 fps and a consequent running speed of the discs calculated in proportion at 27.75 per minute (24 : 33.3 = 20 : x where x = 27.75).[141] (Fig. 2.15)

Fig. 2.15 One of the original shellac discs with the recorded soundtrack of *Cabiria* (1931). The pen on the left is for a comparison of the disc size (404 mm diameter). (Author's picture)

The MNCT preserves three sets of the original seven shellac discs, recorded on both sides, each of them corresponding to one of the 14 reels of the film. In the restoration of the sound version of *Cabiria* (1931), de Oliveira provided the new print with an optical soundtrack, reproducing the music and the sounds of the original discs. This operation required careful work to clean and stabilize the material. Although the discs had been carefully preserved in the MNCT, they showed signs of ageing due to the numerous projections.[142] Even if the MNCT made three extant sets of the discs available to de Oliveira, the restoration of the sound was still a real challenge since all of them had

[141] Ernesto Cauda, who described the sound record systems available in 1930, did not even list Bixiophone among the standard systems of synchronization, whereas he did cite another Italian system, Fonofilm Italico Robimarga. See Valentini, p. 265.

[142] Pastrone had written an operating manual for projectionists, indicating that it was advisable to use the discs no more that 25 times, and explaining how to achieve the correct turntable speed and how to change the volume according to the dramatic intensity of the scenes. See Valentini, notes nos 7 and 24, p. 271.

some damage. In addition to wear due to projections, none of the discs was free from defects, mostly of the record grooves. Even more problematic was the fact that some defects were present at the same point in all three sets, suggesting faults that had originated during manufacture (i.e. in cutting the master) rather than during projections. After cleaning and stabilizing the material, de Oliveira needed to play the discs – which had been closed for 75 years in their boxes – though the playback technology of the time was not available anymore. Thus, de Oliveira adapted a commercially available Pioneer turntable to suit the size of the discs and to the fact that they needed to be played from the centre outward rather than the other way round.[143] He then transferred the recordings from the discs to a digital medium and subsequently filtered cracks, crackles, clicks and distortions through audio editing software, Sony Sound Forge 8, in order to master the restored sound. In addition, de Oliveira dealt with the problem of the reduction of the broad-spectrum noise together with equalization. The possibility of manipulating the sound by digital means might appear to change the work of restoration into a work of improvement, since the increasingly powerful set of audio processes allows one to make the sound better than the original, creating something that did not exist in the past (even though the original author might have wished for a better result than he obtained). However, de Oliveira tried to avoid this risk. First, he sampled the characteristic hiss of the discs and recorded it together with the music through another software, Fast Fourier Transform. Second, he chose an equalization as close as possible to that typical in the 1930s, trimming the frequencies over 7KHz and below 50Hz. He also followed exactly Pastrone's indications about adjustment of volume corrections.

These choices may have conflicted with the taste of today's audiences, who usually identify restoration with perfection, but they represent the ethics of restorers

[143] In passing, de Oliveira made the arm longer to adapt it to the radius of the discs. Then, he ordered a technician to make the needle and adjust the angle of incidence of the stylus to the grooves, since the record was monophonic and the soundtrack was on one side only of the triangular section of the grooves. Finally, he balanced the weight of the stylus to make the records play properly.

(see the discussion on this issue in 1.4 and 4.1). It is this kind of issue that Barbera has in mind when he speaks of a new sensibility in the field of restoration, justifying the need for new work on *Cabiria* only ten years after the last intervention.

2.4.9 The original 1931 soundtrack

Luigi Avitabile and José Ribas wrote an original (not compiled) soundtrack for the sound reissue of *Cabiria* in 1931. The *Fire Symphony* was excluded from the new score, since Pizzetti refused to grant permission to use it.[144] The new score was conceived as a lyric-symphonic poem that included not only the music but also some sound effects, since the technique of mixing was still not available in Italy and it was necessary to include the effects in the score.[145] This explains what Valentini defines as 'musical onomatopoeias': the tympani that emulate the rumbles of Etna erupting and the collapsing buildings, or Fulvio Axilla's dive into the water or the use of string instruments to imitate Croessa's moans under the lashes of the whip and the horselaugh of her torturer.[146] However, there are also other sounds that seem to be real and not imitated by the orchestra: the breaking of a jar by Sophonisba, the big pot that hits the ground with a crash during the eruption, and the grumbling of the crowd in mob scenes like the storming of Cirta. These kinds of synch were not a novelty: other composers had imitated real sounds, trying to synchronize them with the image.

Pastrone enriched the scene of the sacrifice in the temple of Moloch by shooting the chorus and the priest of Moloch singing in lip synch with the music – a practice that

[144] About these composers see Comuzio, p. 256.
[145] Alberto Boschi, 'Il passaggio dal muto al sonoro in Europa', in *Storia del cinema mondiale*, I, pp. 393-427 (p. 407).
[146] Valentini, p. 269.

recalls the *Tonfilme* produced few years before, especially in Germany, which reproduced a singer performing an aria synchronized with discs.[147]

2.4.10 Reconstructing the intertitles

In the 2005 restoration de Oliveira faced the problem of reconstructing the intertitles of both the silent and sound versions. Since there was no Italian print of the original version and the negatives of the intertitles were lost, various sources were used to establish the text of the intertitles and the font used in the silent version: the programme distributed during the Italian première of 1914; the document of the censorship office; the available foreign versions of the time; titles from other films produced by Pastrone for Itala Film. In addition, another piece of information came from a letter that Pastrone had written to d'Annunzio, informing him that new printed characters (in capitals and in the style of stone inscriptions) were needed that were not available on the market.[148] In order to reconstruct the lost font of the characters in the silent Italian version, de Oliveira used the typographic style of the Spanish print from 1919, a re-edition made by Pastrone himself.[149] Cherchi Usai is quite critical of this choice, asking why de Oliveira, even though he knew that the negative of the English intertitles existed, did not use them for reproducing the font.[150] In an interview de Oliveira justifies this choice claiming that not only the English titles, but also the American ones, were of very poor quality.[151] Cherchi Usai, moreover, doubtful about the intertitles that divide the single episodes, notices that the justified style of the intertitles was quite unusual at the time and the words too often start the line. Actually, in this case de Oliveira based his choice

[147] Ennio Simeon, 'L'ambiente musicale ufficiale italiano e il cinema muto', p.110.
[148] *Giovanni Pastrone: gli anni d'oro del cinema a Torino*, ed. by Cherchi Usai, p. 82.
[149] de Oliveira, p. 59.
[150] Cherchi Usai, 'Cabiria salvata dalle fiamme', p. 73.
[151] Author's interview with de Oliveira, London, 29 July 2006.

on the reference of the Italian screenplay of *Cabiria* edited in 1977, on the occasion of the first attempt at restoration, when Pastrone's original copy was duplicated.[152]

Actually, the problem was to reconstruct not only the character format of the intertitles, but also their background together with the four round decorations at the corners. The Spanish print presents three different kind of marble as a background of the intertitles, whereas there is no background in the negative of the English intertitles. Cherchi Usai, however, doubts whether the Italian release version had this kind of background and believes it may have had none at all. A piece of evidence is provided by the film *Maciste*, directed by Pastrone and Romano L. Borgnetto in 1915, where there is a scene showing a screening of *Cabiria*. In this interesting case of film within a film and self-quotation, there is no background in the main title. This is why Cherchi Usai suggests as a criterion of restoration leaving the intertitles without the background until further evidence can prove the contrary. [153] In this case the temporal proximity (1919) to the Italian print (1914) and the certainty that Pastrone edited this copy supported de Oliveira's choice to use these different backgrounds for the restoration of the silent version (Fig. 2.16)

[152] The screenplay is published in *Cabiria*, ed. by Radicati and Rossi.
[153] Cherchi Usai, 'Cabiria salvata dalle fiamme', p. 72.

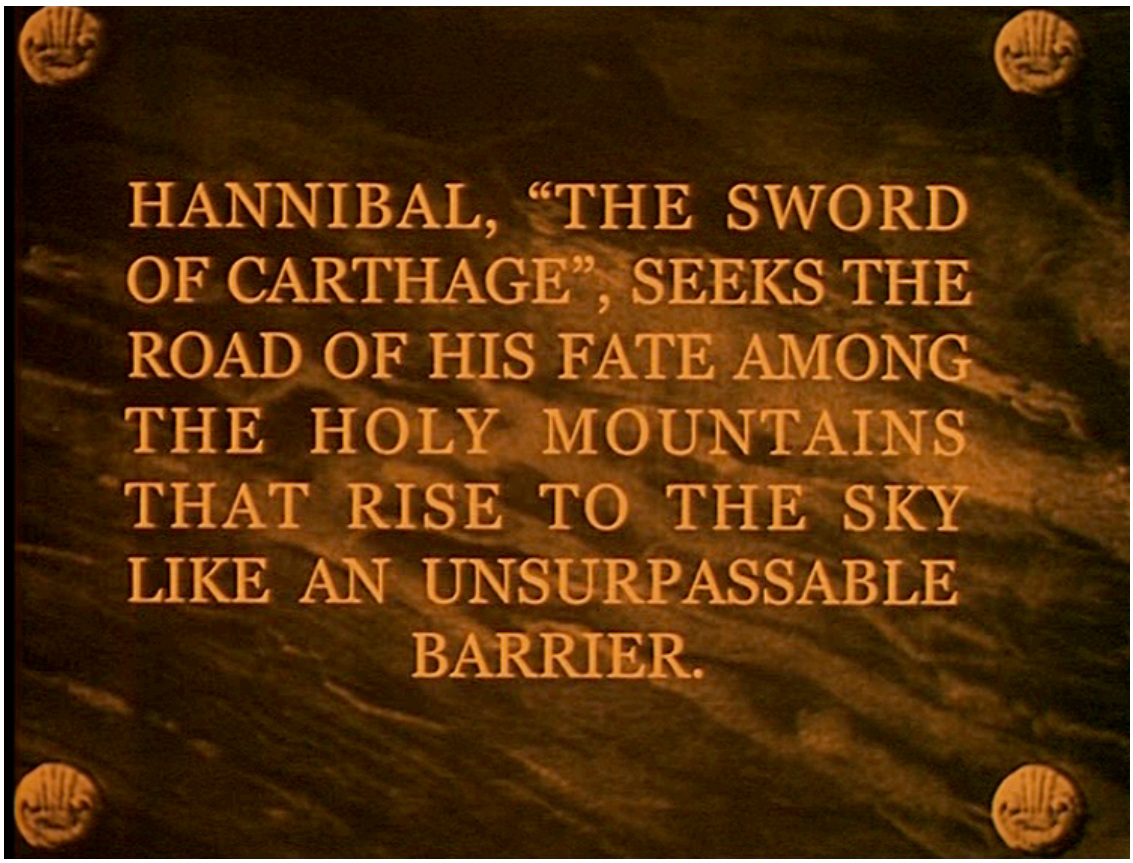

Fig. 2.16 An intertitle of the restored print (1914 silent version) with the marble background and the four decorations at the corners of the frame

De Oliveira made another personal choice when he decided to use the image from the cover of the 1914 *libretto di sala* as the opening title. The same image is used at the beginning of the 1931 sound version and it seems probable that Pastrone used it in the silent version as well (Fig. 2.17)

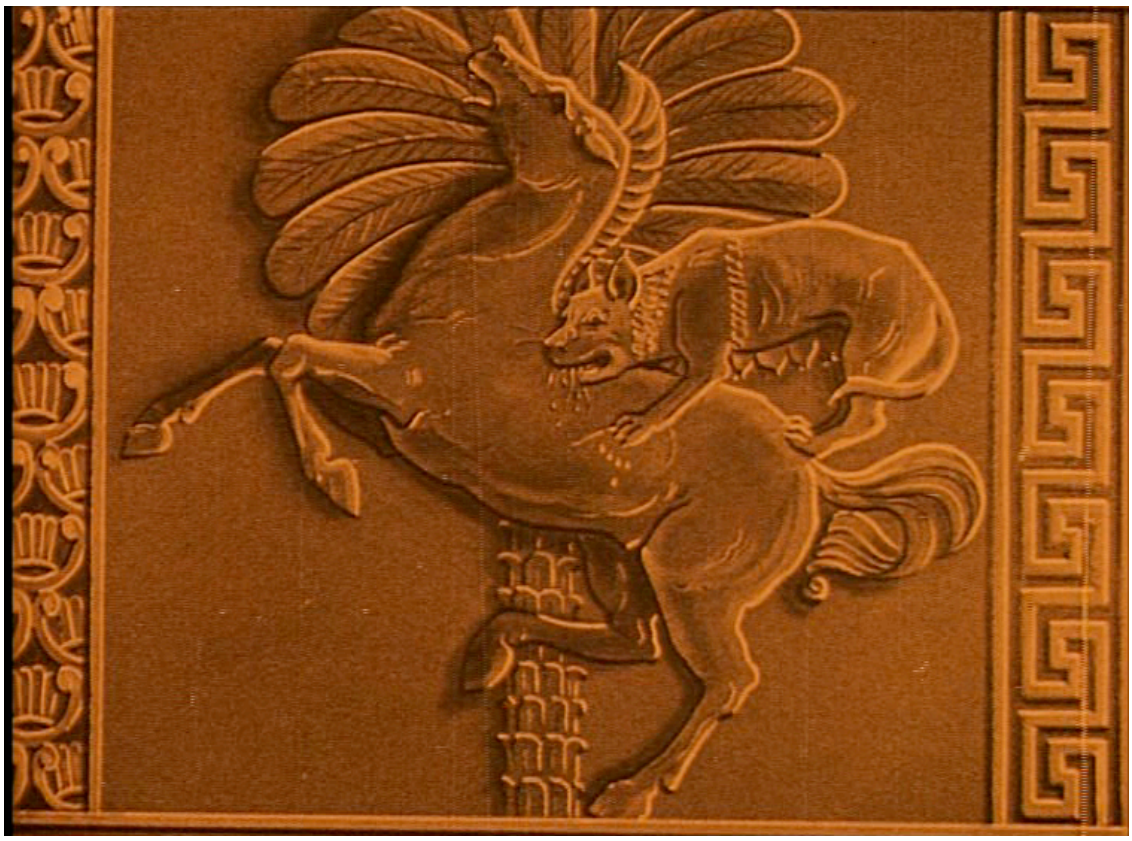

Fig. 2.17 The allegorical image of a she-wolf (symbol of Rome) biting the back of a horse was the opening title in the 1931 sound version of *Cabiria*

The reconstruction of the sound version was definitely less problematic because de Oliveira had at his disposal as a reference both the negatives of titles and intertitles, together with the 1931 *libretto di sala*. In the reconstruction of the intertitles de Oliveira used both photochemical and digital technology. His decision to film them on a rostrum camera and print them through the A/B roll printing technique (the background plus the intertitles) was motivated by the need to print different language versions: Italian, English and Spanish. He was thus able to use the same three backgrounds, matching them with the intertitles of each version.

The controversial reconstruction of the intertitles is a good example with which to demonstrate how the restoration of a film presents a continuous challenge for the restorer, who is often compelled to operate by conjecture. However, the result is usually

presented 'as if' it were the 'original', whereas it is always a form of approximation, or – in de Oliveira's words – a 'simulation'.[154]

2.4.11 Projection: a neglected issue

Ninety-two years after the première of *Cabiria* in the Teatro Vittorio Emanuele in Turin (18 April 1914) the screening of the restored version took place (20 March 2006) in the same theatre.[155] In spite of de Oliveira's meticulous care in preparing this screening, it did not meet his expectations because of the technical conditions of the projection. Although he had gone to Turin well in advance of the projection it had been impossible to place the projector in the right position, perfectly perpendicular to the surface of the screen. In fact, as Cherchi Usai wrote after the show in a critical review, the Teatro Vittorio Emanuele was not designed to be a *movie* theatre.[156] As a consequence, the image was not entirely contained in the rectangular shape of the screen, but projected with a slight trapezoidal shape, causing – for instance – the decorations at the four angles of the intertitles to be not completely visible. In addition, the focus of the image on the screen was seldom perfectly even, due to the fact that the screen was not perpendicular to the optical centre of the lens.

Another problem arose during the projection: two streams of killer lights – prepared for the orchestra and the chorus – rained down from the ceiling on the both sides of the screen, altering the appearance of the colours and the brightness of the image.[157] In order to compensate for this problem, at the première of *Cabiria* in the

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[154] Author's interview with de Oliveira, London, 28-29 July 2006.
[155] *Cabiria* was shown simultaneously in Rome, at the cinema-theatre Costanzi, and in Milan, at the Lyric Theatre.
[156] Cherchi Usai, 'Cabiria salvata dalle fiamme', p. 73.
[157] A similar problem occurred during the projection of *LDP* because of the light of the orchestra in the pit. See Ch. 2.3.

Teatro Costanzi in Rome (April 1914), the orchestra had been cleverly 'hidden under a red screen, to prevent the light, necessary for the musicians, from hitting the screen.'[158] In his review, Cherchi Usai complained that some of the scenes were too dark (e.g. when Fulvio Axilla, Croessa and Maciste meet on the seashore). This may have been the result of the screen's reflectivity (i.e. the percentage of light reflected in a given direction) or its luminance (i.e. the brightness of the reflected light) but also of the power of the bulb in the projector, in addition to the density of the colours.

Reporting on the screening of the sound version of *Cabiria* at the Cinema Massimo the following evening (21 March 2006), Cherchi Usai wrote that he had a much better impression. The brightness of the images and their correct contrast might be credited to the use of pre-tinted film stock, available also at the time in which Pastrone provided the film with a soundtrack, and the fact that the Massimo is a movie theatre, not a theatre pretending to be a cinema, like the Teatro Vittorio Emanuele. The only mistake Cherchi Usai noticed was the ratio of the projector mask: instead of the original (1.33:1) another ratio was used (1.37:1). As a consequence, a tiny part of the image was cut off during the screening, particularly evident during the projection of the intertitles, when some of them were cut on the left edge. (Fig. 2.18)

[158] Vittorio Mariani, 'L'esecuzione al Costanzi', *Il Tirso*, XI (1914), 3-4, quoted in *Cabiria & Cabiria*, ed. by Alovisio and Barbera, pp. 387-9 (p. 388).

Fig. 2.18 The original frame slightly reduced on the left side to make room for the optical soundtrack (Author's photograph)

2.4.12 Conclusion

It is worth examining why the institutions that commission a work of film restoration do not seem to realize the fundamental importance of projection. Perhaps there is a latent prejudice about film restoration, deriving from the restoration of other kinds of works of art such as paintings or sculptures, that it is sufficient to restore the film as an object and that it does not require particular attention after that. The object-film can be considered restored even if it is badly projected or not projected at all. Yet, it must be stressed that the *appearance* of films takes place in a later stage, distinct from the work on the film material. A restored painting can be put on a wall and if the conditions of illumination are bad, the exhibitor can easily adjust them. Instead, a film requires a cumbersome and complex technology to be shown. For instance, if the level and colour of the light on the screen is wrong, or the correct conditions of projection are not fulfilled, the work of restoration may be negatively affected.

A laborious work of restoration of a silent film deserves highly professional conditions of projection in order for the appearance to be fully appreciated. One has to consider whether to adjust the screening venue to bring it near to what the audience may have experienced at the time the film was originally shown. One also has to think carefully about the music. It is well known that the orchestra and the chorus very rarely performed the original soundtrack of *Cabiria* because of the costs involved. More likely other music, possibly worse than the Pizzetti and Mazza score, accompanied most screenings of *Cabiria*. Over the years many prints of *Cabiria* existed and were distributed and performed with the music of other composers, especially in foreign markets.[159] For instance, Caranti reports a version distributed in France and Belgium with the music of two French composers, M.G. Dini and Jules Mazellier.[160] This seems to support the idea that the concept of *original* is very vague, especially in relation to the appearance of a film. All the various projections of *Cabiria* could be considered *authentic*, simply because at the time the audience experienced the film in different ways (e.g. coloured through various techniques), with music different from the original. Nevertheless, given that the original scores of silent films were very few, when there is the possibility of recovering the original score and performing it, it seems advisable to seize the opportunity, as in the recent case of the 2010 screenings of the restored copy of *Metropolis* (directed by Fritz Lang, 1927) accompanied by the original score by Gottfried Huppertz (see 4.1) or the similar occurrence in 1983, when the screenings of *The New Babylon* (directed by Grigorij Kozintsev and Leonid Trauberg, 1929) were performed with the original score by Dmitri Shostakovich, rediscovered only in 1975. This practice seems to be valid, even though sometimes the experience of enjoying the original soundtrack may conflict with the modern audience's taste.

[159] Comuzio, pp. 251-2.
[160] Caranti, p. 168.

Whereas great attention is focused in a restoration on the painstaking reproduction of the original images, there is rarely the same attitude towards the music, probably because it is considered as detached from the film and susceptible to change. Thus, the principle of the most faithful reproduction of an authentic print seems to be fulfilled only (and partially) for the image, as if an early film were really without a soundtrack or, at least, that it was not that important to retrace and reproduce it. It is interesting to note in this respect that the one-off screening of the silent version of *Cabiria* on 31 January 2007 at the Cinema Massimo in Turin was in fact accompanied by music composed by Stefano Maccagno. It remains to be investigated why someone made the commitment to reconstruct and perform another *authentic* version after all the efforts to reproduce the aesthetics of the show experienced by the audience in 1914.

In reconstructing the original editing of the silent version of *Cabiria*, de Oliveira critically adopted the principle of completeness. The final length of the restored print was 3,300 metres, whereas the restored 1995 version had been 3,343 and the original 3,370.[161] This does not mean that de Oliveira's work was less accurate, since he presented a new hypothesis of editing, eliminating about 150 m. of film shot by Pastrone for the sound version – erroneously added to the 1995 reconstruction – and recovering 100 m. taken from the Spanish version (the detail of the ring that Croessa puts on, and the framing of the moon). This was the result of a work which may be compared to textual criticism, and to an archaeological excavation, involving an analysis of all the available sources, including extra-filmic material (e.g. the colour charts). It is perhaps for this reason that, in addition to the technological progress that has been made recently in the field of film restoration, Barbera contrasts the tendency in the 1980s and 1990s to insert all possible scenes from different versions with a new sensibility, one which is more careful in reconstructing the author's intentions.[162]

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[161] Testa, p. 32.
[162] Giampiero Vietti, 'Cabiria, la madre di tutti i kolossal', *La Piazza di Torino*, 26 April 2006, p. 38.

Interestingly, de Oliveira not only defined the aim of his work – namely to reconstruct the Italian distribution version of 1914 and the sound version of 1931 – but also indicated its limits, especially for the silent version, which he presented as conjectural. In fact, while it is possible to consider de Oliveira's work on the sound version as an intervention of *preservation* (involving the cleaning and stabilizing of the original discs, and recording the soundtrack onto a new film stock), the work on the silent version may be defined a *critical* restoration because of the conjectural reconstruction of the first Italian edition. The splices with the imprinted marks of Pastrone's initials establish that the editing of the sound edition is original: a capital 'G' for Giovanni is on the last frame of each shot and a capital 'P' for Pastrone is on the first frame of the following shot. This was the solution to the problem of maintaining the synch between sound and image when the film was accidentally broken during a projection and the projectionists needed to fill the missing parts with a corresponding piece of film.

The restoration of the 1914 silent version is instead the attempt to reconstruct the archetype of *Cabiria*. Cherchi Usai defines this restoration as a work of *integration*, with reference to the use of different sources (16 mm and 35 mm) in order to reconstruct the film in all its parts.[163] This case is also comparable to the recent restoration of *Metropolis*, using the 16 mm footage discovered in Argentina 'spliced' with the already existing 35 mm (see 4.1). Actually, in comparison with the 1995 work, one might define the restoration of the 1914 silent version of *Cabiria* as a work of *dis-integration*, since de Oliveira eliminates some shots that were found to be spurious. Cherchi Usai, in fact, recognizes that this is may be the first time in which the final print of a restoration work is shorter than the previous one.[164]

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[163] Cherchi Usai, 'Cabiria salvata dalle fiamme', p. 73. On the same issue see also <http://www.cinetecadelfriuli.org/gcm/ed_precedenti/edizione2006/Italia.html> [Accessed 5 August 2010].

[164] Cherchi Usai, 'Cabiria salvata dale fiamme', p. 72.

From a technological point of view, it is worth noting that the original 1931 film is different from the new print made in the Prestech laboratories. In 1931, as has been seen, the sound edition of *Cabiria* had a soundtrack recorded on and to be reproduced on discs. It was a silent version that a projectionist had to perform matching the running of the film and the playing of the discs, taking special care with synchronization. At the time a sign in the central part of the discs indicated the start. The way these discs ran was different from modern long-playing records not only because of their speed, but also for the direction of the arm moving from the centre to the edge of the disc. In 2006 the new print reproduces the soundtrack through a modern optical variable area soundtrack, printed on the edge of the film stock. This means that this edition does not allow for any possible movement out of synch. The new edition is a 'mummified' version in one of its possible multiple forms. Even though the sound frequencies – designed to reproduce the aesthetic experience of the audience of the time – were exactly the same as in the original, the perception in a modern cinema would be different. The original squeaking of the discs, which was reduced or eliminated through a painstaking work of digital filtering and equalizing in 2006, for instance, would have been less noticeable in 1931, not only for technical reasons, but also because the audience was accustomed to hearing those defects. On this basis one could argue that filtered sound in 2006 would produce for a contemporary audience an experience closer to that of the 1931 audience than unfiltered sound.

Regarding the use of the music in the attempt to reconstruct the 1914 version, it must be stressed that de Oliveira analyzed Mazza's score, calculating the bars and the time of the orchestra performance as possible evidence that Pizzetti's symphony was played before the film screening. This is an interesting and quite original way to acquire information from a special extra-filmic document to reconstruct the film as such.

The restorers who worked on *Last Days of Pompei* in 1994 showed a different perspective: they did not even attempt to find the original music, since the aim of Antonio Coppola, who proposed the project of restoration, was to write a new score. Thus, the film shown in the theatre at Pompei in 1994 cannot be considered an *authentic* version corresponding to when the original film was made, but rather as a form of interpretation.

In conclusion, it is worth stressing, once again, that any work of restoration produces a new object that bears witness to its time, in both its theoretical and its technical approach. The work of restoration on a film settles one moment of its history. The attempt to recreate the original conditions in which the audience enjoyed it might perhaps be regarded as an endless work of approximation. In fact, a restoration appears to be – above all – a work of research that can produce an ever-improvable result.

In this chapter I have sought to identify the key criteria of silent film restoration through an inductive method of research, which has involved a description and analysis of the technical procedures in four cases of film restoration completed between 1994 and 2006. This research has highlighted a number of recurring issues: the identification of the film to restore, often a necessary prerequisite to the decision to undertake the enterprise of restoring; the problems in dealing with figurative and narrative differences in the available versions of the same film to be reconstructed; the gap between the original and the modern technologies of film making and presentation, with which restorers need to deal in order to reproduce the main features of so-called ‘silent’ films; the challenge of reconstructing the original score, if it existed, also to confirm a hypothesis about the possible original editing; projection as the most important outcome of the restoration, and as the epiphany of the ‘aspect’ of a film.

An examination of these practical examples of film restoration has shed light on the main theoretical aims behind the restorers’ choices and enabled us to reflect on

them. My next chapter deals with a comparison between these principles of film restoration and those of other fields of restoration which traditionally have a more well-developed theoretical background: painting, sculpture and architecture. I shall take into account two key issues in art restoration – patina, namely the veil time leaves on artworks, and lacuna, or breaks in original integrity of the art work – before considering these two issues in the restoration of films.

3 Patina and Lacuna in the Restoration of Paintings, Sculptures, Monuments and Films

3.1 Patina: what to remove

> For time shall with his ready pencil stand,
> Retouch your figures with his ripening hand;
> Yellow your colours, and imbrown the tint;
> Add every grace which time alone can grant;
> To future ages shall your fame convey,
> And give more beauties than he takes away.
>
> John Dryden, *Epistle XIV, To Sir Godfrey Kneller: principal painter to His Majesty.*
> (ll. 161-166)

As the terminological section of Chapter 1 (1.4) established, 'restoration' is a broad concept that applies to all forms of visual art. While various methods have been elaborated to adapt to the specific conditions of each art, there remains a common purpose in the many practices of restoration. A comparison of the material conditions and the rationale of restoration in what are traditionally considered the 'major' visual arts – painting, sculpture, and architecture – may therefore help to shed light on the theory and practice of restoration in the field of films.

The first claims made for cinema as an art comparable with the established arts date back only about a century and they took a number of years after that to become widely accepted. Ricciotto Canudo, one of the first theorists to make such claims, argued in 1911 that cinema was the synthesis of the arts of space (architecture, painting and sculpture) and of time (music and dance). Some years later (1923) he added poetry to the list of the five arts and classified cinema as the seventh art.[1] As we saw in Chapter

[1] See Ricciotto Canudo, 'La Naissance d'un Sixième Art: Essai sur le cinématographe', *Les Entretiens Idéalistes*, 10 (1911), pp. 55-66, reprinted in *French Film Theory and Criticism: A History/Anthology, 1907-1939*, ed. by Richard Abel (Princeton: Princeton University Press, 1993). See also Ricciotto

1, the idea that films are worth conserving and restoring is even more recent. It is perhaps not surprising, therefore, that a systematic comparison has not yet been made between film restoration and practices of restoration in the other arts, about which the debates now stretch back several centuries. However, as I aim to demonstrate in this chapter, such a comparison can be highly illuminating and productive for a theory of film restoration.

Necessary distinctions must be made, of course, one of the most important being that films are, to return to Benjamin's reflection, designed to be technically reproducible and to exist in multiple copies. However, provided that these differences are sufficiently taken into account, I believe some very productive and illuminating comparisons can be made and can add to the ongoing debate on film restoration in fruitful ways. In each of the two main sections of this chapter, respectively on patina and on lacuna, I shall deal first with restoration debates and practices in other forms of visual art – painting, sculpture and architecture – and then move onto film, ending in each case with some conclusions.

As has been seen in the foregoing chapters, in the restoration of works of art there are at least two fundamental tenets with which restorers and conservators have to deal: reversibility and recognizability. The concept of recognizability is less controversial than that of reversibility, which is defined as 'the capability of a conservator to remove any residue or effect introduced or caused in or on an object by a conservation treatment, either at the time of treatment or subsequently'[2]. A number of experts have demonstrated that a conservation treatment is fully reversible only in theory, but hardly ever in practice.[3] Thus, in the 1990s the term 'reversibility' started to

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Canudo, *Manifeste des Sept Arts* reprinted in Ricciotto Canudo, *L'Usine aux images* (Geneva: Office Central d'édition and Paris: Chiron, 1927).

[2] Richard D. Smith, 'Reversibility: A Questionable Philosophy', in *Reversibility: Does It Exist?* ed. by Oddy and Carroll, pp. 99-103 (p. 99).

[3] See Karen L. Pavelka, 'Access as a Factor Contributing to Compromise in Conservation-Treatment

vanish from the codes of ethics in the guidance published by the UKIC (United Kingdom Institute of Conservation), even though it remained present in the code of ethics of the AIC (American Institute for Conservation of Historic and Artistic Works). Scholars have started defining reversibility as 'a "chimera", a "ghost" or a "myth", a sort of "Holy Grail"'[4]. Barbara Applebaum has pointed out that the term is doomed to an inevitable decline, and has introduced instead another concept, *re-treatability*, which indicates a treatment aimed at strengthening 'what is left of the object'. Such treatment 'may not prevent further deterioration of original material' so that 're-treatment may not be far in the future.'[5] The discussion is currently more focused on the possible damage a treatment can cause, rather than reversibility *per se*. Thus, conservators carefully evaluate the ageing characteristics of the material used for restoration work in order to prevent changes in the appearance of artworks or objects under their responsibility. The virtual impossibility of achieving true reversibility in restoration led scholars in the 1980s to theorize the concept of *minimum intervention*, that is, 'the less that is done the better'[6]. Possibly, this more tentative approach to conservation derives from a better awareness of the damage resulting from inappropriate or inaccurate treatments that have been administered in the past.

One of the most widely discussed topics is related to an apparently less controversial and more neutral treatment of artworks: cleaning. In fact, the idea that the 'true nature' of an object/art work (e.g. painting, sculpture, monument) can emerge after cleaning is well rooted in common opinion. Especially in the last century, soiling (e.g. dirt, dust, mud) or decay products (e.g. rust, accretions of dirt and stains) have been

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Decisions', in *Reversibility: Does it exist?*, pp. 105-110.

[4] Muñoz Viñas, p. 187.

[5] Barbara Appelbaum, 'Criteria for Treatment: Reversibility', *Journal of the American Institute for Conservation*, 26 (1987), 65-73 (p. 68). Also available in electronic source: <http://aic.stanford.edu/jaic/articles/jaic26-02-001_indx.html> [accessed 25 August 2010].

[6] For the historical use of terms related to conservation see Chris Caple, *Conservation Skills: Judgement, Method and Decision Making* (London: Routledge, 2000), p. 62-5.

considered as a frangible barrier, to be broken in order to make contact with a past work of art, with its 'true' appearance. Therefore, apparently, cleaning could bring about a sort of revelation of artworks, supposedly hidden by an extraneous, obscure material. However, cleaning is by no means a neutral operation revealing the 'true' nature of artworks. It is itself irreversible. After cleaning or dirt removal, it will be impossible to recover what the conservator has taken away. Thus, what time, previous restorers and artists themselves have done to the artwork could be lost forever. In brief, cleaning may affect what is called 'patina'.

Etymologically, the word patina appears to derive from a Latin word for a shallow dish. It perhaps referred originally to encrustation on ancient bronze dishes due to oxidation. Among other possible etymologies, Phoebe Dent Weil mentions 'a shiny dark varnish applied to shoes'.[7] However, scholars refer to patina in many different contexts, including paintings, sculptures and monuments. In the field of conservation, patina is a well-grounded concept, even though the definition is still hotly debated and the relevant literature is vast. Like lacuna, which will be discussed in the following section, patina is a sign of the age of the work. Usually, patina indicates two kinds of different things: firstly, it includes dirt and soiling caused by the exposure of the artwork to the elements and the passage of time, even in an art gallery. In this case it is a natural consequence of the life of the artwork; the accumulation of dirt on paintings over time can be appreciated by looking at Figure 3.1, which also details the kinds of particles and lint that can affect the work.

[7] Phoebe Dent Weil, 'A Review of the History and Practice of Patination', in *Historical and Philosophical Issues*, ed. by Stanley Price, Talley Jr., Melucco Vaccaro, pp. 394-414 (p. 399).

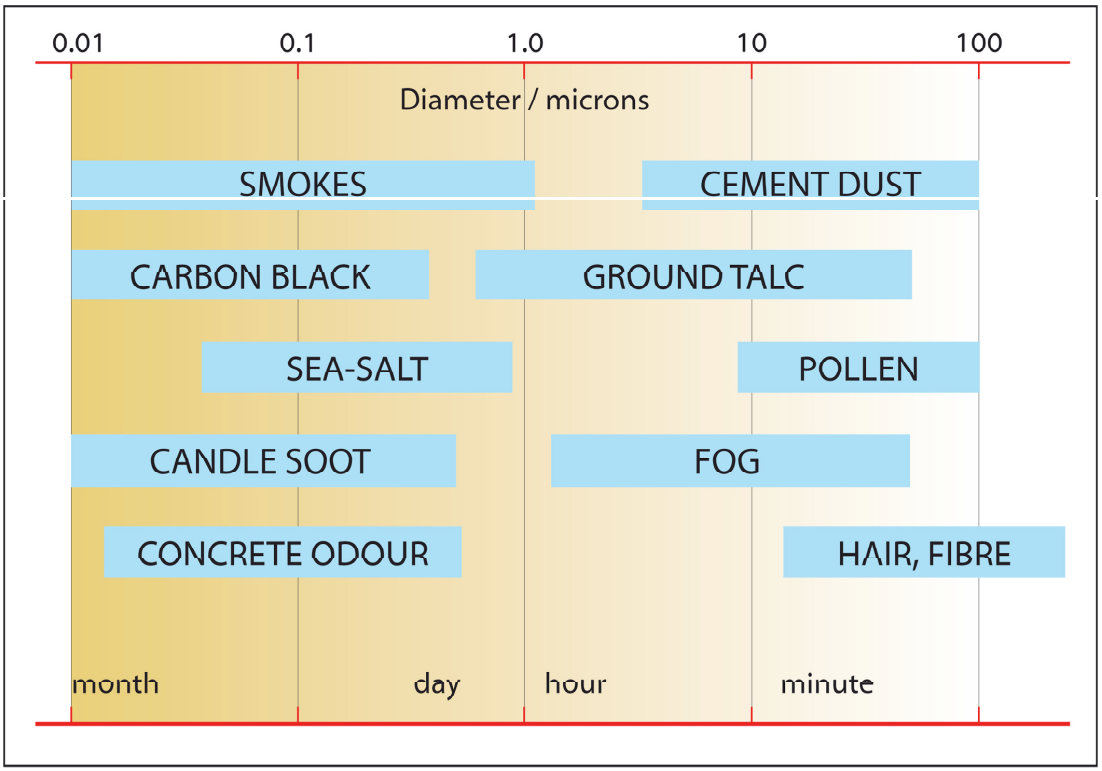

Fig. 3.1 Illustration of dirt accumulation. Length of time needed for different sized particles and lint falling 1 metre to accumulate on the surface of paintings[8]

Secondly, in certain cases patina is caused intentionally through human intervention. It is well known, for instance, that painters in the past deliberately applied coats of transparent or coloured varnish on paintings and on sculptures both in order to protect their works and to give an additional aesthetic appeal. There are at least two terms indicating this type of varnish: 'glaze' (a dark layer on light ground) and 'scumble' (light on dark).[9] The first conservators, in other words, seem to have been the artists themselves, even though they were primarily concerned with artistic effect, giving their work an even tone or a particular shade of colour over time. Conversely, there are cases in which interventions by artists or restorers actually produce unintentional damage. Such is the case of interventions aimed at attempting to protect or

[8] The chart is an adaptation of a figure taken from Peter Brimblecombe, 'Particulate Material in Air of Art Gallery' in *Dirt and Pictures Separated,* ed. by Joyce Townsend, Stephen Hackney, Nick Eastaugh (London: UKIC, 1990), p. 8.

repair artworks, but which in some way have affected the original aesthetic appearance of the work.

Interestingly, regardless of whether the patina is intentional or not, the issue of patina itself seems to be absent in the field of film restoration. Actually, in 1992, Canosa expressed his hope that film restorers would soon debate the question of patina, but there is almost no trace of such a discussion in the relevant critical literature.[10] Since in other fields of restoration scholars and restorers have been fiercely debating the question, this section provides a context and a point of reference for the discussion on patina in film, which follows at the end of the section.

3.1.1 Paintings

A good example of unintentional damage is that of the work of conservators after the Second World War at the National Gallery in London. An exhibition there of cleaned paintings was followed by the so-called 'cleaning controversy' of 1946-47 in which two schools of thoughts clashed. The first, led by Philip Hendy, director of the National Gallery, and Helmut Ruhemann, chief restorer, upheld the legitimacy of the restoration work, producing a scientific analysis in order to prove that the chemical solvents and mechanical operations aimed at cleaning the pictures had not affected the pigments.[11] According to this way of thinking, patina was a romantic invention, an infatuation with ruins dating back to John Ruskin, William Morris and the so-called Anti-Scrape Society (Society for the Protection of Ancient Buildings). The second school (Cesare Brandi, Paul Philippot, Ernst Gombrich) completely disagreed, claiming that the cleaning had

[10] See Michele Canosa, 'Immagine e materia', p. 34.
[11] See also the polemical article by Neil Maclaren and Anthony Werner, 'Some Factual Observations about Varnishes and Glazes', *The Burlington Magazine*, 92 (1950), 189-92.

not taken into account either the historical case, that is, the effects of the passage of time and of the work of other restorers, and the aesthetic case arising from varnishes and glazing that painters had put on their works. In a fierce debate Brandi demonstrated that the application of patina was a well-known practice in the past among artists, even though they had tended to keep it as a sort of secret element of their work.[12] In brief, apparently conservators at the National Gallery had affected the patina of the paintings on which they had worked.

What was at stake, and something that the supporters of complete cleaning did not take into account, was the optical behaviour of the varnishes, including the saturation of colours and effects of refraction.[13] There is evidence that at least since the Renaissance the great masters of the past used varnishes and glazes not only to protect their paintings, but also to make colours more vivid, or – on the contrary – to 'mitigate', or soften the effect of strong, bare colours (in Brandi's opinion), or even to create new colours. Different techniques, such as putting a veil of varnish beneath the paint or, on the contrary, a coat of varnish on the paint, or mixing varnishes and paints, gave different results in the appearance of the colours themselves.[14] In addition, both natural and synthetic resins used as principal components of varnishes tend to yellow overtime. The final result is therefore a brownish or yellowish tone overall. It seems that the artists knew and calculated to a certain extent this possible effect during the conception of their work.[15]

A confidential investigation, conducted by a commission led by John Weaver, President of Trinity College, Oxford, sought to ascertain whether the cleaning of the

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[12] Brandi, *Theory of Restoration*, pp. 101-08.
[13] *Sul restauro*, ed. by Alessandro Conti (Turin: Einaudi, 1988), p. 10.
[14] Thomas Brachert, *La patina nel restauro delle opere d'arte* (Florence: Nardini, 1990), pp. 49-59.
[15] Among the most quoted source testifying the ancient masters' awareness about the effect of patina there is Filippo Baldinucci, *Vocabolario toscano dell'Arte del Disegno* (Florence: Santi Franchi, 1681), p.119, quoted in Cesare Brandi, 'The Cleaning of Pictures in Relation to Patina, Varnish and Glazes', *The Burlington Magazine*, 91 (1949), 183-88, republished in Brandi, *Theory of Restoration*, p. 101-8.

pictures exhibited at the National Gallery had affected the pigments of the paintings. The commission's report stated that conservators had not taken original colours away. However, the report did not take into account the optical connection between layers of colours and layers of varnishes and it therefore misconceived the appearance, and what Brandi theorized as the unity, of the work of art. In fact, the surface of the works of art had been materially altered, despite the fact that pigment was not lost. A good example of this was the new appearance of Rembrandt's *Night Watch*, which, after cleaning, turned into a 'Day Watch'.

In subsequent discussions scholars and conservators have identified three levels of cleaning, corresponding to different approaches and aesthetics in restoration: total cleaning (where all the yellowish varnish and 'over-extensive, or poor quality, retouchings' are removed 'as unwanted later accretions'), partial cleaning (in which most of the varnish is uniformly removed 'so as to leave a layer of the discoloured varnish on the surface of the paint') and selective cleaning (when only some areas are cleaned 'to restore the relationship of values that is believed would have existed in the original work').[16] Hedley, taking issue with Walden and Gombrich, who stood up against the possible practice of over-cleaning,[17] was clear in explaining that in the case of partial cleaning, which is aimed at tracing the supposed original intentions of the artists, or selective cleaning, which tries to reconstruct the balance of original tonal values and the relationships they had with each other, the interventions are more subjective. In fact, given that there is no evidence of the extent of the changes of colours and varnishes over time, total cleaning would emerge as an 'objective' intervention, while 'subjective' interventions are postponed to the retouching stage. However, even if

[16] Gerry Hedley, 'On Humanism, Aesthetics and the Cleaning of Painting', in *Measured Opinions*: *Collected Papers on the Conservation of Paintings*, ed. by Caroline Villers (London: UKIC, 1993), pp. 152-78 (p. 154-56).
[17] See foreword, key writings and unpublished letters by Ernst Gombrich in Sarah Walden, *The Ravished Image: An Introduction to the Art of Pictures Restoration & Its Risks*, rev. edn (London: Gibson Square Books, 2004).

'the great advantage of total cleaning is that it reveals what we still have'[18], in this case as well the wish to recover the authors' intentions remains frustrated because of the differently decayed original colours. Therefore, the only possible relationship between past artworks and present viewers is always relative to some extent, regardless of the kind of cleaning.[19] In addition, it must be admitted that cleaning can damage paintings and there is always the risk that this might happen.

The decision made by curators will reveal a partial 'truth': the fact must be accepted that it is not possible to preserve everything. This is particularly true when conservators have to deal with over-paintings, namely further artistic alterations, and so-called 'pentimenti' ('second thoughts') as well. In the first case, painters different from the original artist changed a picture by retouching missing areas or covering parts of the work, sometimes in order to 'restore' it. In the second, artists went back to paint on the original works, sometimes giving more than one variant, as can be appreciated in Fig. 3.2. These different aspects of the same work could derive from different causes. In the case of Bronzino's portrait, for instance, Heffley mostly gives political reasons for the changes Bronzino made over time.[20] In this case conservators decided to leave the last appearance of the work both as a protection of the other variants and to respect the author's last variant.

[18] Ibid., p. 161.
[19] Caple, p. 97.
[20] Ibid., p. 319.

Fig. 3.2 Three different stages of Bronzino's *Portrait of a Young Man* (c. 1550), here schematically reconstructed, were revealed through X-radiography and cross-sections of paint samples (first on the left), infrared reflectography and cross-sections (the figure in the middle). On the right side the painting as it appears today[21]

During the cleaning of the Sistine Chapel, completed in 1994, conservators made the decision to erase the breeches which had been over-painted in the eighteenth and nineteenth centuries in order to clothe the naked biblical figures, since these retouches were not felt to be historically relevant. Conversely, conservators maintained the ones from the sixteenth century, because they were seen as evidence of the spirit of the Counter-Reformation and the dictates of the Council of Trent (concluded in 1564, twenty two years after the unveiling of Michelangelo's frescoes), even though Michelangelo did not originally paint these retouches either.[22] In this instance conservators seem partially to have followed Brandi's opinion on architecture restoration that the proper way to deal with insertions subsequent to original works is to remove only the ones dating from the nineteenth century. The reason for this is that awareness of the historical instance of works of art has been growing from then on.[23] Apart from religious or political reasons, modifications could be made because of

[21] This figure is taken from Scott A. Heffley, 'Bronzino's Portrait of a Young Man', in *Tempus Fugit: Time Flies*, ed. by Jan Schall (Kansas City, Missouri: The Nelson-Atkins Museum of Art, 2000), pp. 316-20 (p. 318). Paint cross-sections are tiny paint samples that are viewed on end microscopically, so that the individual paint layers can be studied.

[22] Gianluigi Colalucci, 'Il restauro della volta e del Giudizio della Cappella Sistina e la tecnica nella pittura ad affresco di Michelangelo: nuove riflessioni', in *La Sistina e Michelangelo: storia e fortuna di un capolavoro*, ed. by Anna Maria De Strobel, Francesco Buranelli, Giovanni Gentili (Milan: Silvana Editoriale, 2003), pp. 82-91 (p. 85-6).

[23] Cesare Brandi, *Struttura e architettura*, 2nd edn (Turin: Einaudi, 1967; repr. 1975), pp. 309-14.

changes in taste or fashion. This is the case, for instance, with Romanino's *Nativity* (c. 1525), which Giuseppe Molteni, working as a restorer at the Brera Gallery in the nineteenth century, apparently 'improved' by over-painting a piece of white drapery on an ox's head, perhaps because it was seen as being too close to the infant Christ.[24]

Many restorers claim that in cleaning artworks, restorers need to make a case 'for each object as a separate entity and, even if a process is repeated on one object after another, it is because it can be justified in each separate case'[25]. In some cases it is necessary to leave further, sometimes non-original retouchings and repaintings on the work, since cleaning would reveal only ruined fragments of the original artwork. As in the case of *The Sultan Mehmet II*, attributed to Gentile Bellini, what is visible today is mostly Molteni's work of repainting; thus cleaning – no matter to what extent – would be extremely damaging.

3.1.2 Sculptures and statues

In the field of statue restoration as well, conservators have to deal with patina and the related issue of cleaning artefacts. Statues that are displayed outdoors are obviously more vulnerable to environmental changes, and the different materials of which they are made have led to enormous differences in conservation practices. For example, the greenish patina naturally acquired by bronze statues, due to sulphides and oxides, is today considered generally pleasant and it is often in great demand.[26] Conversely, in the past the result of a work of polishing, aimed at giving the metal artefact a shiny aspect, was carefully preserved. Especially since the Renaissance, this kind of natural patina

[24] David Bomford, *Conservation of Paintings* (London: National Gallery Publications, 1997), p. 55.
[25] Caple, p. 100. See also Paul Philippot, 'The idea of Patina and the Cleaning of Paintings', in *Historical and Philosophical Issues*, ed. by Stanley Price, Talley Jr., Melucco Vaccaro, pp. 372-6 (p. 375).
[26] See the case of the restoration of The Statue of Liberty (New York) in Caple, pp. 39-45.

has acquired aesthetic value. Thus, as in the case of paintings, artists have often created intentional patina on their work through an artificial process called patination (fig. 3.3). The ancients distinguished two kind of patinas: *aerugo nobilis* (intentional 'noble patina') and *virus aerugo* (unattractive and virulent rust of bronze). Some evidence that artists used patinas to protect or give a special appearance to their works comes from ancient literary sources, such as Pliny the Elder's *Natural History* (XXXIV, 21), in which he refers to the use of *atramentum tectorium* (a special mix of linseed oil and pitch), to cover bronze statues. Another interesting source is the *Papyrus of Leyda*, where the anonymous author reports a number of recipes for substances used both to protect and to give an aesthetic appeal to metal sculptures.[27]

Fig. 3.3 *Balance* by David Ascalon (1999). The artist applied a patina of marbleized blue to the sculpture using reactive chemicals on the metal surface

These days, conservators are much more aware of the risks involved in removing patina,

[27] Licia Vlad Borrelli, 'Restauro', in *Enciclopedia Universale dell'Arte* (Venice: Istituto per la collaborazione culturale, 1963), XI, pp. 338-44 (p. 342).

leading to what has been called 'the patina dilemma'. Firstly, decay processes can make it impossible to distinguish patina from the original material of the sculptures. Sometimes patina 'is formed at the expense of the substance of the object itself'.[28] Secondly, patina can contain important historical information worthy of being preserved. The issue about how much to clean and when to stop cleaning can be considered even more problematic, especially for polychrome statues. Over the centuries, at least until the nineteenth century, the most glaring error was that the artistic work of painting statues, seen as an embellishment, was not considered an art, or even not taken into account at all. This misconception led to the decision to 'restore' the appearance of these works by re-painting them periodically. Obviously, there were differences between the kinds of painting material used on statues intended to be shown outside rather than inside, thus also a different frequency of intervention.

More recently, in the eighteenth and nineteenth century, neoclassical taste guided archaeologists, conservators and antiquarians in appreciating the whiteness of ancient statues. Since they were not aware that those works had been coloured on purpose, they cleaned them, trying to eliminate the colours, which are rarely visible today, especially in statues that were buried in the soil. Reportedly, Bertel Thorvaldsen's sedulous recklessness led him to wash the sculptures of the Aphaia temple, which Charles Robert Cockerell and Baron Otto Magnus von Stackelberg had removed from Aegina in 1811. As a consequence, he eliminated the surviving colours of those artworks forever. The statues from the Parthenon met the same fate, after Lord Elgin moved them from Athens to London.[29]

Indeed, there is a striking resemblance between the lack of awareness about the original appearance of these artworks, and the consequently ill-advised cleaning, and the reprints of coloured silent films in black and white that many film archives made in

[28] Weil, p. 395.
[29] Brachert, p. 101.

the past, eliminating the original nitrate prints because of their dangerous inflammability. This bred the idea in cinemagoers that silent films were in black and white, rather than colour. As a result, the narrative meaning of colours was lost, as in the case of *Nosferatu, Eine Symphonie des Grauens* (directed by F. W. Murnau in 1922), in which scenes set at night, previously in coloured blue, appear incomprehensible if printed in black and white because the empty streets in which Nosferatu prowls are apparently in broad daylight.

Interestingly, Enno Patalas notes another similarity between the black and white reprinting of coloured silent films and the whitening of coloured statues in churches in the nineteenth century. The varying attitudes of different cultural contexts and historical ages have fostered a variety of 'ways of looking'. Patalas provides an interesting case in point when he denounces 'a strong bourgeois (and misogynist) prejudice […] expressed by Charles Blanc in 1867, when he called black and white drawing "the male sex of the art" and colour "the female sex", and warned that if one day black and white drawing would no longer be dominant over colour painting, art would be lost, "comme l'humanité fut perdue par Eve".'[30]

Today conservators and restorers of fine arts (not only of sculptures) conduct painstaking analyzes through different instruments (e.g. microscope, X-Ray, X-fluorescence, ultraviolet ray, electroluminescence, infra-red spectroscopy, chromatography, ageing tests, and so on) before attempting any intervention on artworks for which they take responsibility. Thus, following the 'minimum intervention' tenet, sometimes conservators decide not to clean at all. One case in point is the conservation work done on *Striding Lion*, a Japanese wooden statue dating from the thirteenth century (Kamakura period). It was originally coloured and decorated, but over the centuries the colours and the further repaintings flaked off. Hence, Kathleen M.

[30] Enno Patalas, 'On "Wild" Film Restoration', p. 35.

Garland, the conservator, decided to avoid cleaning the statue: rather, she simply stabilized its condition, so as not to reveal 'a visually disturbing patchwork of damage and repair, altering the patina of time.'[31] Similarly, Giovanni Guardia, the director of the conservation and restoration laboratory of the board of the Campania Region of the Italian Ministry of Cultural Heritage and Environmental Conservation, strongly opposed cleaning five silver statues exhibited at the Treasure Chapel in the San Matteo Cathedral in Salerno. Here the reason for avoiding the cleaning was that patina preserves special colouring features of silver. Patination gave the statues' silver surfaces lights and shades that a reckless cleaning would eliminate.[32] Regardless of whether the patina is naturally acquired or intentionally applied, its existence concerns both the historical and the aesthetic case.

3.1.3 Architectural monuments

In the case of monuments (churches, temples, amphitheatres, triumphal arches and other historical works of architecture), the most common meaning attached to the word patina is dirt, as well as alterations of material produced over time. These accretions can affect the material (e.g. marble) with which the works are made and complicate the decision-making process of restorers. What is more, the expansion of industrial society has affected the appearance of monuments in new ways, due, for example, to air pollution.

Brandi claims that for at least four centuries now scholars and art lovers have appreciated the aesthetic case of patina, and cites instead as a mistake 'the costly and

[31] Kathleen M. Garland, 'The Patina of Time. Technical Record of Treatment: Japanese Striding Lion', in *Tempus Fugit*, ed. by Schall, pp. 322-5.
[32] Giovanni Guardia, 'Statue metalliche a Salerno: tecnica e conservazione', in *Pensiero è Libertà* (Associazione Culturale Salerno, 2009) in <http://pensieroeliberta.jimdo.com/un-patrimonio-artistico-da-tutelare> [accessed 25 August 2010].

disrespectful cleaning of the Colosseum'.[33] Today scholars agree on the historical and aesthetic value of patina as well, which cannot be replaced after careless cleaning. Many irregularities (e.g. 'cracked stones, worn or chipped and spalled and eroded edges, softened arrises' brickworks, uneven surfaces of mosaics and floors'[34]) are also special features of the work and should be preserved.

3.1.4 Films

The preceding discussion of other fields of restoration should allow us now to situate better the specific problems involved in the cleaning of films. With films it is necessary to distinguish two different possible meanings of 'cleaning': the first is the practice of washing a film during developing and printing; the second refers to the practice of cleaning old prints or negatives. The scope of this thesis requires an analysis of the second case only.

If one compares the structure of the surfaces both of paintings and films it is possible to pinpoint many correspondences between the two different kinds of artwork, as well as obvious differences. In both paintings and films, the first (outermost) layer is made up of dirt (dust, hair, carbon black), often trapped in the layer below. The macroscopic difference is that while paintings suffer scratches and damage on one surface only, films have two specular surfaces (base and emulsion) which are exposed to similar wear and tear. Paint layers are comparable to the emulsion, the ground to the

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[33] Cesare Brandi, 'Restauro', in *Enciclopedia Universale dell'Arte*, XI, pp. 322-32 (p. 332). Brandi provides no date to identify the restoration process. He presumably refers to the cleaning of Giuseppe Valadier's work, who tried to imitate the appearance of the original material (travertine), covering the new walls made of yellow bricks with a white 'patina *a fresco*' (see subsequent section on lacuna). See also Marconi, *Il recupero della bellezza*, p. 68.

[34] Bernard Melchior Feilden, *Conservation of Historic Buildings*, 3rd edn, 1st ed 1982 (Oxford: Elsevier, 2003), p. 266.

binder, and the support to the base. Even though the similarities and differences between paintings and films, highlighted in Figure 3.4, are evident, the most significant element should not go unnoticed: that light passes through all layers of films, while it is incident on the surface of paintings. As a consequence, the interaction between support and image affects the appearance of paintings and films in different ways. In addition, it is impossible to project a film with a damaged base, for instance a shrunken or curled film, whereas it is always possible to admire a painting even when it is cracked.

However, over time many conservators of paintings have taken into account deterioration of supports as an additional cause of damage to the painting surfaces. Restorers have designed special techniques to detach images (paint layers and varnishes) from decayed supports (a well known example is the detachment of frescoes from walls, followed by application to a new support). Actually, film restorers have had to deal with the preservation of both the surfaces (base and emulsion). It seems that in film restoration, only João de Oliveira has attempted to detach the emulsion from the support in order to recover the image (i.e. the aspect, see 1.3) trying to place it on a new base (working on stills).[35] This time-consuming and costly technique seems not to have been completely successful and there seems to be no trace of the experiment in the scientific literature. However, this effort to maintain the original image without having recourse to the usual means of duplication opens the debate to further reflection not only on the technical level, but also on the semiotic one (see 4.1).

[35] This experiment emerged in a private conversation with de Oliveira in London, 12 February 2005.

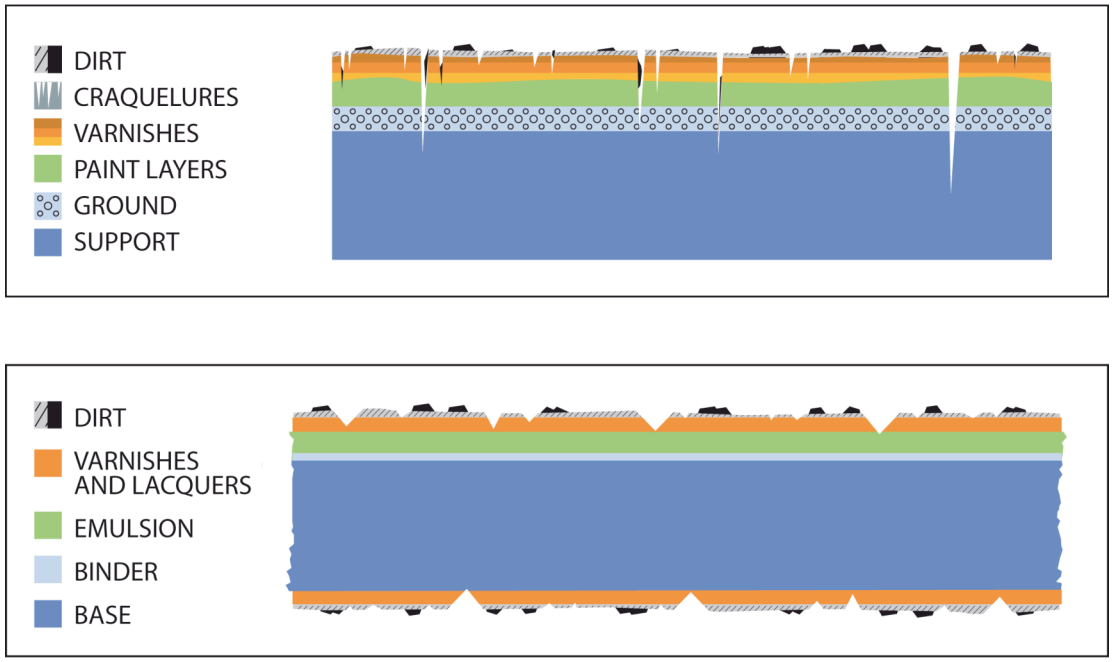

Fig. 3.4 The structure of a painting in section (above), the structure of a film in section (below). (Author's drawing)

As for patina, the lesson to be learned, at least from the case of the 1940s cleaning controversy in painting preservation, is that restorers should assume that cleaning can affect patina, regarded by a great number of scholars as an integral part of the artworks. Yet the same concern seems not to have arisen among film restorers.[36] One piece of evidence of the prevailing practice of cleaning films without a previous detailed analysis is the usual procedure involving a special machine, commonly called a 'washing machine', designed to clean modern films automatically, without human intervention. Unfortunately, such machines can cause severe damage to tinted prints (i.e. coloured silent films), removing dyes together with dirt.[37] Therefore, it is necessary to test the effects of solvents in order to ascertain that they do not cause a loss of colours, whether they were added by tinting, toning and stencil or incorporated into the

[36] See Canosa, 'Immagine e materia', p. 34.
[37] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 100. About other film cleaning methods designed to avoid damages see ibid., pp. 102-4.

pre-tinted bases.[38]

However, intentional and unintentional patina should be distinguished in films: the latter kind is typically dirt (dust, hairs, finger prints, particles of carbon black, and stains of oil from projectors), while intentional patina derives instead from various treatments. These include, firstly, the normal procedures of covering films with a coat of glycerine after developing, washing, fixing and last washings;[39] and secondly, the process of waxing nitrate films before projecting in order to protect them from scratches and damages both on the emulsion and the base.[40] There was also a safety reason for waxing nitrate films, namely the need to avoid fires which could be caused by friction between nitrate films and metal devices of projectors or by the very action of winding or unwinding the films themselves. To this day, Kodak and SMPTE suggest the practice of waxing films (full and edge coating) during print processing for optimum projection life and performance of release prints. Full coating is designed to reduce abrasion and wear caused by the projector, and improve steadiness, while edge coating is used to protect release prints from theatrical projectors lubricants.[41] In the past, at least starting in the mid 1930s, 'coating [prints] with a varnish-like lacquer' (on one or both sides) was a quite common practice to protect films from scratching.[42] The advantage was that, if the scratch was on the base side, it was possible to remove the lacquer and thus the scratches as well. Then, another new layer of lacquer could be applied.

Interestingly, this old lacquer (different from the modern polymers applied today on films) tends to become yellowish over time, exactly as in the case of varnishes and lacquers on paintings. The difference is that in paintings a great number of artists

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[38] Gian Luca Farinelli and Nicola Mazzanti, 'L'immagine ritrovata ovvero prassi ed esperienza di un laboratorio di restauro cinematografico', *Cinema&Cinema*, 19 (1992), 69-78 (p. 73).
[39] On the first of these sets of treatments see Vittorio Mariani, *Guida pratica della cinematografia* (Milan: Hoepli, 1916), p. 192.
[40] On the reasons why Eastman Kodak Company recommended projectionists to wax new prints see the source (a promotional booklet) quoted by Cherchi Usai in *Silent Cinema,* pp. 204-5.
[41] <http://motion.kodak.com/US/en/motion/Support/Technical_Information/Processing_Manuals/H24_Modules_Online/index.htm> [accessed 6 August 2010] (paragraph 2 of 13).
[42] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 101.

anticipated the effect of varnishing and calculated it to some extent, while filmmakers did not. Thus, without any further discussion, Read and Meyer conclude that 'it is always better to remove it (lacquer)'.[43] Yet, it might be worth adding a little uncertainty to this assertiveness. Obviously, it is necessary to clean old nitrate films in order to duplicate them onto safety film stock, but it is also useful to reflect on the fact that cinemagoers of the time watched these works in very different conditions than the ones we are now used to. Aside from the equipment, already described in 1.3, the veils of wax and lacquer gave a different transparency to the prints. The modern intervention of cleaning, by eliminating the effects of the passage of time and giving a sparkly and even appearance to old films may in fact make them look 'fake'. Even though a treatment to eliminate the mould and bacteria that variously affect old nitrate films is necessary (as James Scott ascertained in 1914),[44] it is important to determine *how much* to clean, in order to avoid what Philippot calls 'the predominance of a hygienic interest in the object over an aesthetic interest in the image.'[45]

Perhaps in the case of films the concept of patina can be considered something subtler to define. All the fine scratches and little bits of damage that can be detected on the original negatives, or on the first generation prints, may be considered as the special marks of the time in which a film was made. In addition, they can help to reconstruct a sort of philological 'stemma' of the work, for in the process of printing and duplication these 'signs' pass from one copy to another. Thus, conservators may use these signs to trace the history of every single print, and above all, to maintain the original characteristics of films, complying not only with what Brandi denominates 'the historical case', but also with 'the aesthetic case'.

In this respect, films restorers often have to make choices that are similar to the

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[43] Ibid., p. 101.
[44] Quoted in Stephen Bottomore, '"A Fallen Star": Problems and Practices in Early Film Preservation', in *This Film Is Dangerous*, ed. by Smither and Surowiec, pp. 185-90 (p. 187).
[45] Philippot, 'The idea of Patina and the Cleaning of Paintings', pp. 372-76 (p. 375).

decisions taken by conservators of paintings, as in the case of Bronzino's *Portrait of a Young Man* or Michelangelo's frescoes in the Sistine Chapel. As I noted in 2.3, the Italian version of *The Last Days of Pompei* included a scene with semi-naked women at the baths whereas in versions made for foreign markets the women were dressed. In this case the restorers were forced to decide which version to use as the basis for the restoration: they chose the Italian version because the production of the film was Italian. The difference is that in the case of paintings, the choices bring about irreversible results. As a matter of fact, it is now impossible to recover the breeches erased from the figures in Michelangelo's frescoes, while in a future restoration of *The Last Days of Pompei* it would be possible to reconstruct the scene with dressed women by making a different edit. The two covered versions of Bronzino's *Young Man*, dressed in different ways, will remain preserved, but hidden from the world. Making one of the other versions visible would mean destroying the others irreparably. Such would be the case if a restorer cleaned a retouched and over-painted picture, whose original underlying painting is already damaged to the point of being irrecoverable.

In conclusion, a more careful approach to the procedures of film cleaning and related decisions might avoid the inevitable impression that Phillips had about synthetic varnishes upon examining restored paintings: 'these are and remain exceptionally clear, but have an evenness and a faint lustrous tooth to them which can appear incongruously like a protective layer on a consumer product.'[46] It is obviously necessary to ponder the rationale behind the commissioned work of restoration: restoring a film to enable conservators to reconstruct stemmata, or even simply as a piece of historical evidence, is a somewhat different matter than restoring a film to make it suitable for public exhibition – whatever 'suitable' can be taken to mean in this context. There is a great risk that the painstaking work of restoration could indulge the needs of commercial

[46] David Phillips, *Exhibiting Authenticity* (Manchester: Manchester University Press, 1997), p. 141.

exploitation and of today's way of 'watching/looking', confirming instead of challenging the audiences' impression that to 'restore' a film means to make it look 'like new'.

3.2 Lacuna: what to add

> E, nel vero, sarebbe meglio tenersi alcuna volta le cose fatte da uomini eccellenti, piuttosto mezze guaste, che farle ritoccare a chi sa meno.[47]
>
> Giorgio Vasari, *Vita di Luca Signorelli*

If patina challenges restorers on how and to what extent they should remove the traces of time on a work (historical case), the questions posed by lacunae, or gaps in the work, are whether restorers should intervene to replace missing material (historical case), and, if it is agreed they should, what they should add and how (aesthetic case).

For a long time in the past, retouching a damaged or decayed painting or reinforcing a building whose stability was threatened was considered a restoration. Up to the nineteenth century, the act of 'embellishing', 'improving' or even 'completing' artworks was also quite common and the market demanded this activity. Evidence of this way of thinking is easily traceable in theoretical literature written by restorers between the middle of nineteenth century and the first decades of the last century. Giovanni Secco-Suardo, for instance, in his manual *Il restauratore dei dipinti* (Milan: Hoepli, 1866, 1873, 1927), claims that restorers should fill in lacunae perfectly so as to make it impossible to distinguish interventions on the original.[48] Thus, one of the most important sacrifices a restorer had to make was that of renouncing his or her own style and embracing anonymity. Moreover, Secco-Suardo's exhortations in favour of ethical behaviour – he insists that restorers be patient in cleaning, sincere when recommending a restoration, honest so as not to take advantage of customers' ignorance – seem to

[47] 'In truth it would sometimes be better to leave works half spoiled when they have been made by men of excellence, rather than to have them retouched by inferior masters'.
[48] *L'arte del restauro: il restauro dei dipinti nel sistema antico e moderno secondo le opere di Secco-Suardo e del prof. R. Mancia*, ed. by Gino Piva, 3rd edn (Milan: Hoepli, 1988), p. 9.

allude to common suspicions against restorers accused of unprofessional behaviour or complaisant subordination to purchasers. As a matter of fact, there were many restorer-painters – a well-known manual written in this period by Ulisse Forni was entitled *Manuale del Pittore Restauratore* (Florence: Le Monnier, 1866) – who could not only perfectly imitate the style of the old masters but were also capable of turning a profane subject into a sacred one, cutting a painting into pieces and placing figures in different areas or in different paintings or even splitting paintings into smaller ones by adding new figures and landscapes, cutting and pasting subjects and changing their position (e.g. from a reclining to an upright position), transferring a painting from canvas to wood panel and vice versa or giving it a new shape according to a new taste of the times.[49]

If, in the case of cleaning, discussed in 3.1, the matter was how much restorers can legitimately take away from an artwork (while accepting the fact that no matter how a work is cleaned, the artist's intention cannot be fully recovered), in this instance the problem is how much they should add. *Reversibility*, the controversial concept discussed in 3.1, is still involved, as is *recognizability*, that is, the condition that enables viewers to distinguish restorers' interventions easily. This concept will be predominant in the present section of this section since, while cleaning is irreversible, the integration of lacunae should hopefully be reversible.

Firstly, it is necessary to define what lacuna means in different fields of artistic expression. Brandi provides a clear, all-embracing statement when he says that 'lacuna is an unjustified, even painful interruption in the form.'[50] A similar definition is given by Philippot, who insists on the idea of 'interruption of the object's artistic form and its rhythm […], be it in a picture, a sculpture or a monument of architecture'[51]. More

[49] See, for instance, the case of Giuseppe Guizzardi reported in Conti, *Storia del restauro*, p. 237.
[50] Brandi, *Theory of Restoration*, p. 92.
[51] Paul Philippot, 'Historic Preservation: Philosophy, Criteria, Guidelines, II', in *Historical and*

precise information is needed to distinguish different types of art. All of them have the potential to represent something, but some also provide a functional aim (e.g. pieces of furniture or pottery, musical instruments, objects made of glass, and other similar artefacts). This is particularly true in the case of special parts of architecture such as a column or a telamon, used as a static support in ancient buildings, in addition to its ability to convey visual messages. In this case the end is not only figurative, but also functional.[52]

Thus, in trying to define what lacuna is in artworks, it is important to distinguish a figurative from a functional lacuna. Films, in particular, often present structural defects in their support (i.e. in the physical material itself, as a result of deterioration or damage), which may be badly damaged, quite a common condition of many silent films after years of improper preservation. The condition, of course, is not peculiar to films only, but may apply to all forms of art involving a support (another example is that of frescoes).

3.2.1 Paintings

In the case of paintings it is possible to detect different kinds of figurative lacunae, according to the depth of the damage. Regardless of the level of the lacunae, they alter the original appearance of the artwork.

In the past, boundaries between the work of artists and that of restorers were blurred, and many artists offered their services to restore paintings in a mimetic way aimed at concealing damage and lacunae. The crucial issue was not merely that of deciding the factual intervention, but assessing the ability of the intervener. Titian, for

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Philosophical Issues, ed. by Stanley Price, Talley, Melucco Vaccaro, pp. 358-63 (p. 358).

[52] See Giuseppe Basile, *Che cos'è il restauro? Nove studiosi a confronto* (Rome: Editori Riuniti, 1994).

instance, criticized the unknown restorer of Raphael's frescoes in Pope Clement VIII's palace after the 1527 sack of Rome. Ironically, the restorer was none other than Sebastiano del Piombo, that is, the artist who was leading Titian to admire the restored frescoes.[53] Many painters refused to work on great masters' works because they felt that they were inimitable (a position held also by Guido Reni, 1575-1642).[54] It is this concept of uniqueness that draws a line to mark the birth of a new idea of restoration.

Only between the end of the nineteenth and the beginning of the twentieth century did the modern concepts of the characteristics and ethics appropriate to a work of restoration arise. Today restoration is an autonomous discipline which has developed its own lexicon and restorers provide documentation of their interventions as a basis for other possible future restorations.[55] This is true also in the field of film restoration, which has developed its own jargon, even though one sometimes hears different technicians using the same words with different meanings.

The core issue of restoration has always been how to fill in lacunae. In the past the most common intervention was to imitate the style of the original painter and conceal the restoration. Brandi's theory of restoration developed in the mid twentieth century on a philosophical basis (Hegel and Husserl in particular) clearly distinguished three moments in the life of a work of art: the time when the artist created it; the interval between that time and the present day; the time of reception (see 4.2). Brandi claimed that a restorer cannot eliminate the time between the conclusion of the creating process and present perception. Thus, it is impossible to recover an artwork exactly as the artist intended it. In this way Brandi underlined the importance of the historical nature of a work that undergoes changes with the passage of time both because of ageing and because of human intervention. Any work of restoration should take into account not

[53] David Bomford, 'Changing Taste in the Restoration of Paintings', in *Restoration: Is It Acceptable?* ed. by Oddy, pp. 33-40 (p. 34).
[54] Conti, *Storia del restauro*, p. 64.
[55] Cristina Giannini, *Lessico del restauro: storia, tecniche, strumenti* (Florence: Nardini, 1992).

only the aesthetic appearance of a work, but also its history, including the past restorers' interventions (at least up until Neoclassicism, when the historical awareness that an artwork is an untouchable testimony of the past was born). [56]

Criticizing empiricism in attempting solutions (i.e. integrations by analogy without historical evidence), and refusing any effort to 'improve' the work of art, whereby the restorer intrudes 'into the moment when the artist was creating the part that is now missing', Brandi established a set of principles (recognizability, reversibility, documentation of restoration) that may still be considered valid today in every field of restoration.[57] The private market, however, has been reluctant in complying with these, which have been widely debated in institutional and academic contexts.

Brandi developed the main tenets of his theory of restoration in 1944, when he was faced with the problem of restoring the frescoes in the Mazzatosta chapel of Viterbo, damaged by a recent air raid. Using Gestalt psychology, Brandi developed the theory that any lacuna appears to a hypothetical observer as a pattern that becomes prominent to the eye: this pattern emerges from the background, assuming the prominence of a figurative element. What the artist had intended as a foreground thus becomes a kind of background, while the lacunae stand out as if they were foregrounded shapes. Moreover, lacunae are intrusive figures, adventitiously inserted in the text of a work of art, so that – exactly as in any optical cognitive illusion – the figure and the ground can appear reversed, according to the observer's perception. Well-known examples of this are the duck-rabbit illusion, the Kanizsa triangle and the Rubin vase (Fig. 3.5).

[56] Brandi, *Struttura e architettura*, pp. 313-4.
[57] Brandi, *Theory of Restoration*, p. 91.

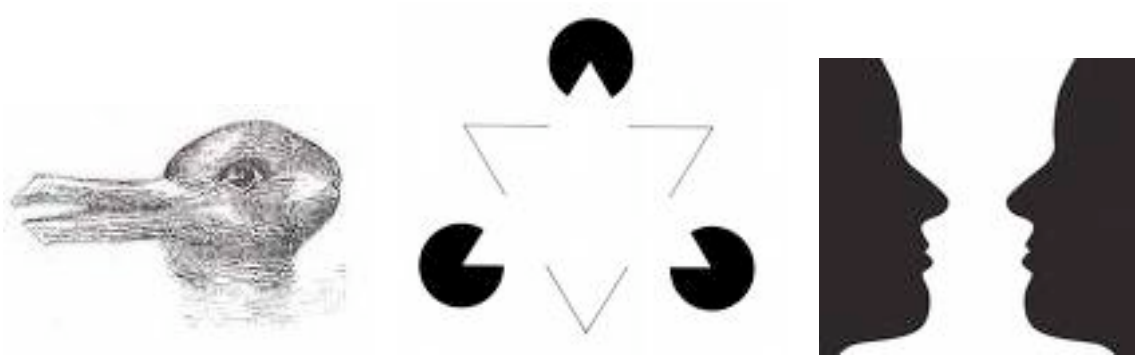

Fig. 3.5 Cognitive optical illusions: duck-rabbit figures, Kanizsa triangle, Rubin's vase

Brandi's solution was permanently to reverse this connection, rendering lacunae as a background, thus letting the remaining figures emerge from the rest of the graphic representation. In order to achieve this, in his theory Brandi started by examining the first possible solution, 'the so-called *neutro* method (retouching in watercolours using only sepia, with a little ochre, burnt sienna, and natural amber)'[58]. Actually, in 1931 the first scholar and restorer to suggest the use of visible retouching had been Helmut Ruhemann, who had listed 'as many as sixteen ways of rendering inpainting discreet yet discrete. These involved use of so-called "neutral" tones'.[59] Brandi was not satisfied with this solution, because it soon became clear that a *neutral tone* does not exist and any colour interferes with the original colours. As a consequence, the lacuna still appears predominant on the original figure. Thus, Brandi contrived another solution, choosing a colour which 'instead of harmonising with or being designed not to overpower the painting's colours – stands out in tone and luminosity (if not in timbre)' so that 'the lacuna would act like the spot on the glass; one could perceive the continuation of the painting beneath the lacuna'[60]. The theoretical principle was that a work of art is not simply the sum of its parts, but its oneness can be perceived also in

[58] Andrea Rothe, 'Croce e Delizia', in *Personal Viewpoints: Thoughts about Paintings Conservation*, ed. by Mark Leonard (Los Angeles: The Getty Conservation Institute, 2001), pp. 13-25 (p. 16).
[59] Helmut Ruhemann, 'La technique de la conservation des tableaux', *Mouseion*, XV (1931), 14-23, cited in Bomford, 'Changing Taste in the Restoration of Paintings', p. 37.
[60] Brandi, *Theory of Restoration* p. 58.

the single pieces that restorers can link through their work. Brandi's original technique, called *tratteggio* or *rigatino*, consists in small vertical coloured lines (one centimetre in length on average) applied with watercolour 'based on the principle of the division of tones'[61]. The aim is to fulfil the two crucial principles of the restorers' ethics: reversibility, since watercolours are easily removable with water, and recognizability, since the material of the paint is different from the originals (usually oil or tempera). A number of innovations to Brandi's method were subsequently introduced, for example by Umberto Baldini, Ornella Casazza and Paola Bracco, who dealt with the extensive damage caused to artworks by the 1966 flood in Florence.

In particular, referring to Brandi's theory about the time-life of a work of art, Baldini argues that in the life of a work of art there are three possible *acts*: the artist's production, the lifetime of the work (considered *positive* when the work undergoes a natural process of decay due to the passage of time and *negative* when the work is altered or mutilated by human interventions) and the maintenance, conservation and restoration of the work.[62] In addition, Baldini classifies lacunae into *lacune-mancanze* (lacks), when there is an alteration of the paint layer, and *lacune-perdite* (losses) when the completeness of the work of art is fatally compromised because of the loss of paint or drawing. It is possible to compensate by chromatic integration (consisting in a colour cross hatching that follows the *ductus* of the modelling, namely the form of the original brushstrokes) in the first case, and chromatic abstraction (which consists in applying a vertical hatching formed by the juxtaposition and overlap of the three primary colours – red, green and blue – and black watercolours that match with the colours of the damaged painting) in the second.[63] In both cases the result will be a mimetic intervention and a viewer can appreciate the restorer's interventions only at a close

[61] Paolo Mora, Laura Mora, Paul Philippot, *Conservation of Wall Paintings* (London: Butterworth, 1984), p. 309.
[62] Baldini, p. 11.
[63] Casazza, p. 66 and p. 70.

distance (6 inches, according to the '6 foot 6 inch rule'[64]).

While in many instances restorers have used methods such as *tratteggio* and *chromatic abstraction* not in order to reconstruct the original figures but only to 'draw back' the lacuna optically in the image to be restored, they have employed *chromatic integration* in an attempt to reconstruct not only the colours but also the pattern of the lost figures. Obviously, there must be no doubts about the shape to be painted, nor should there be a variety of interpretations about what is lost from the original image. Limitations to *tratteggio* are determined by the definition of the contour of the losses, since restorers should not 'overlap the worn parts of the original', where they should use watercolour glazes, which are easy to remove, only for very small losses.[65] Restorers should also avoid another possible mistake: that of reinforcing the co vvfshsecra
tour of losses by painting bands that are too wide and light in colour. This would make the lacunae look like new drawings emerging from the damaged original, optically pushing the original figures to the 'background'. Moreover, restorers should not attempt to fill in lacunae by analogy with other parts of the artwork they are restoring or with other works of the same artist, or the one to whom the work to is attributed. The aim is always to avoid any temptation of subjective intervention, suppressing 'as much as possible the practitioner's own personality'[66] and at the same time, to make it clearly distinct from the original.

In addition to a lacuna on paint layers, another level of lacuna can be on the ground of the artwork. The procedure of restoring should involve the filling of such lacunae with a suitable material to repair cracks. This work must precede that on patina or paint layers in order to make the surfaces even. In both cases (patina and paint

[64] Caple, p. 128.
[65] P. Mora, L. Mora, P. Philippot, p. 310.
[66] Albert Philippot and Paul Philippot 'The Problem of the Integration of Lacunae in the Restoration of Paintings', in *Historical and Philosophical Issues*, ed. by Stanley Price, Talley, Melucco Vaccaro, pp. 335-8.

layers), Laura Mora, Paolo Mora and Paul Philippot prescribe the use of watercolour glazes only, since they are easily removable, to be used with 'a tone of the exact value but very slightly lighter and cooler than the original'[67].

3.2.2 Sculptures

Being three-dimensional forms of art, sculptures pose different problems by comparison with paintings. At first glance it seems difficult to apply Brandi's theory to them, or to architectural monuments, since his distinction between structure and image does not work for them. Whereas the material 'structure' of a painting (e.g. a wooden panel or a canvas) is clearly distinguishable from its appearance (e.g. the figures painted on it), the material structure of statues or monuments (e.g. carved or built stone) is also their image.

Lacunae in sculpture can be of two kinds: missing colours, and missing parts of the sculpture itself. Thus, lacunae can affect not only the appearance but also the statics and stability of a sculpture (e.g. a human figure lacking a leg). In such cases the restorer's intervention must deal with this very practical problem, as well as aim for the recovery of the potential unity of the sculpture's appearance.

The difficulty here does not lie in making compensations of lacunae detectable. Rather, there is no way for a restorer to push the lacunae to the background, as one might do in restoring paintings. This is why Brandi's inspired intuition, for painting restoration, of interpreting the Gestalt theory through a technique – *rigatino* – that creates an optical illusion, and Baldini's and Casazza's subsequent attempts to imitate the photographic printing technique through *chromatic abstraction* or *selection*, can be

[67] P. Mora, L. Mora, P. Philippot, 'Problems of Presentation', in *Historical and Philosophical Issues*, ed. by Stanley Price, Talley, Melucco Vaccaro, pp. 343-54 (p. 350).

feasible only with some colours on polychrome statues.[68] Actually, for most classical statues it is very difficult to find traces of the original colours. While in the past a mistaken idea of classicality led artists and restorers to consider white marble sculpture as truly representative of classical beauty, since they were unaware that the marble was white simply because it had lost its original colour, now restorers try to show how the statues and parts of monuments might have appeared in their original state using virtual reconstructions.[69]

In most modern statue restorations, in order to reconstitute the unity of a work of art the missing parts have been reshaped using a different material from that of the original. The restoration of the equestrian statue variously attributed to the emperor Domitian or Nerva is a useful example to appreciate the difference of solutions elaborated for statue lacunae and painting lacunae. In painting, only a close inspection allows the viewer to detect the difference between the original and the modern intervention, while the difference is clearly viewable in the case of a statue. (Fig. 3.6)

[68] About the conception of polychrome sculptures as individual entities and not as additions of paintings on a carrier of wood or stone see Paul Philippot, 'Le Restauration des Sculptures Polychromes', *Studies in Conservation*, 15 (1970), 248-52.

[69] For instance, the British Museum displays a digital video reconstruction showing how the coloured friezes, metopes, bass-relieves and statues of the Parthenon might have appeared in the fifth century BCE. Another kind of 'virtual restoration' is shown in fig. 3.14.

Fig. 3.6 Equestrian bronze statue of the Roman Emperor Domitian or Nerva (first century CE), Museo Archeologico Nazionale, Naples.[70] This work of restoration complies with the indications of the Krakow Charter of Restoration (2000), which urges restorers to facilitate the 'legibility' of works of art.[71] At the same time this restoration presents a novel solution to the problem of how to reconstitute the potential unity of the original without attempting a mimetic work or an optical illusion

Scholars have suggested that a slight change in approach to statue restoration occurred during the sixteenth century: Orietta Rossi-Pinelli indicates 1520 as the watershed for this shift of sensibility in restoring.[72] While for a long time ancient sculptures had been models of an ideal beauty to be imitated, over the years restorers increasingly aimed to complete the mutilated statues by adding new parts; in addition, they tried to emulate the old masters in order to demonstrate their creative ability. The new self-perception of the restorer-artists gave them the confidence to manipulate

[70] Carbonara, *Avvicinamento al restauro*, fig. 279.
[71] Krakow Charter of Restoration, 2000, Available at: <http://en.www.mcu.es/museos/CE/Funciones/Conservacion/Restauracion.html > [accessed 6 August 2010].
[72] Orietta Rossi-Pinelli, 'Chirurgia della memoria: scultura antica e restauri storici', in *Memoria dell'antico nell'arte italiana*, ed. by Salvatore Settis, 3 vols (Turin: Einaudi, 1986), 3, pp. 183-250 (pp. 194-97). An abridged English version ('The Surgery of Memory: Ancient Sculpture and Historical Restorations') is in *Historical and Philosophical Issues*, ed. by Stanley Price, Talley Jr., Melucco Vaccaro, pp. 288-305.

ancient sculptures, and even employ them as decorations for noble suburban residences.

The effort of these restorer-artists was to complete the ancient works of art with new parts. They understood restoration as a mimetic activity, one which would make it almost impossible to distinguish additions. In order to achieve this aim, restorer-artists levelled off the fractures on the originals to attach new parts, concealing the joints between new parts and the originals, and finally providing the same colour even with different marbles by applying a patina to the sculptures. A good example of this new approach is the restoration of the *Laocoon*.[73] Found in 1506, this marble group soon came to be identified as one that Pliny had considered one of the most famous statues of the classical period. Unfortunately, there were some lacunae: Laocoon and his sons lacked one arm each.[74] Both Baccio Bandinelli and Giovanni Angelo Montorsoli tried to restore the group by attaching respectively a wax and a terracotta arm to Laocoon and to his sons (Fig. 3.7). These attempts to restore the sculpture were inspired by the concept of an imitative compensation of the lacunae. The use of material different from the original can be interpreted in various ways: it might have been reverence towards the original, a wish to make a mark of distinction from it, or a stylistic device to demonstrate the restorer's ability in his competition with the classical artist. Two centuries later (1725-27), another restoration took place, performed by Agostino Cornacchini, who remade the sons' marble arms. Cornacchini did not limit himself to replacing the old integrations with marble ones, but reinterpreted the gesture of Laocoon's younger son, which was more similar, after restoration, to his father's act of rebellion.

[73] Virgil tells his story in *Aeneid*, II, 199-227.
[74] An updated historical outline of this restoration is in Martini, *Storia e teoria del restauro delle opere d'arte*, pp. 73-6.

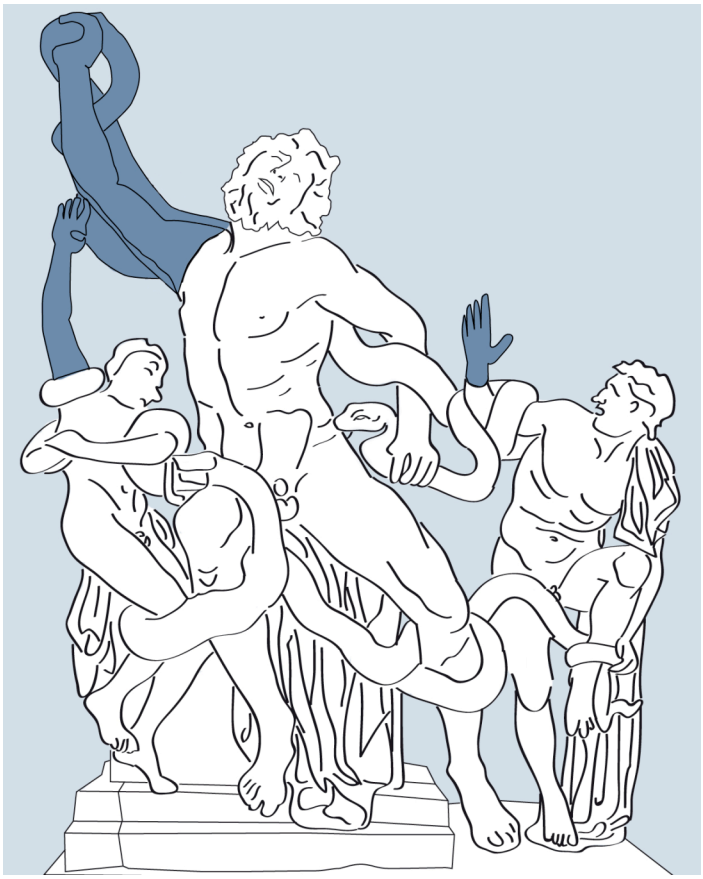

Fig. 3.7 Laocoon group as restored by Montorsoli and Cornacchini. The parts highlighted in blue are those added by Montorsoli and Cornacchini. (Author's drawing)

During the French revolution, the group was brought to Paris on Napoleon's orders, after Cornacchini's and Montorsoli's arms had been removed. In 1816, when the group came back to Rome, Montorsoli's arm was replaced with a marble copy. Finally, in 1905 Pollack, a German scholar, found the original Laocoon arm in Rome. Filippo Maggi in 1960 restored the entire group, dismantling the previous restoration and replacing the original. The result of this de-restoration and partial reconstruction is an expression of the modern purist ethics in conservation.

a) b) c)

Fig. 3.8 Group of *Laocoon* with his sons (attributed to Agesander, Polydorus and Athenodorus of Rhodes, second to first centuries BCE). (a) Baccio Bandinelli's copy, 1520-25; (b) the sculpture restored before the twentieth century; (c) the 1960 restoration[75]

What remains to be assessed is to what extent the elimination of testimonies of the past, as in the case of old restorations, is correct from an historical point of view, especially when the aesthetic result is not satisfactory. Most restorers and scholars usually maintain that this is a case-by-case issue. Actually, such a belief allows for the intrusion of a latent, subjective perspective that reflects different tastes and ways of considering art over time. In fact, in this case of modern restoration, Maggi needed to reconstruct part of Laocoon's shoulder, because of the lacuna due to the long series of interventions over time. Thus, even the most purist and philological approach to restoration, aimed at representing the original artist's intention, is often not completely free from new additions and interpretations. (Fig. 3.8)

The addition of invented parts, even without researching what they might have looked like in the original, became gradually acceptable during the sixteenth and seventeenth centuries and most of the restorations of the time resulted in what were effectively pastiches in which the ancient works of art were simple suggestions for new creations. (Fig. 3.9)

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[75] I have assembled this illustration from three different Internet sources [all accessed 29 August 2010]:
a) <http://www.exibart.com/profilo/eventiV2.asp?idelemento=80462>;
b) <http://immagini.iccd.beniculturali.it/TOGGFOTOWEB/SDW?M%3D54943%26R%3DY >;
c) <http://josamotril.wordpress.com/2009/06/01/el-laocoonte/>.

Fig. 3.9 *Zingara Borghese* 'restored' by Nicholas Cordier (1567-1612), who interpreted an ancient grey marble torso as a gipsy girl adding white marble and bronze parts[76]

In order to emphasize the difference between this and the twentieth-century approach of de-restoration, it is interesting to recall that in the 1960 restoration of the *Laocoon* group, Montorsoli's integrations were removed and replaced with one original arm, even though this decision left other parts of the group incomplete.

In the seventeenth century, baroque artists felt free not only to interpret the ancient remains, but also to add new parts, freely designed to suit the imagination. Gian Lorenzo Bernini, for instance, when restoring the marble statue of *Marte Ludovisi*, added an impertinent Cupid's head between the legs of the Greek god. Alessandro Algardi restored an ancient marble torso, interpreting it as a *Dadophor*, adding arms, legs, head and a palm tree trunk. (Fig. 3.10)

[76] Conti, *Storia del restauro*, pp. 101-2.

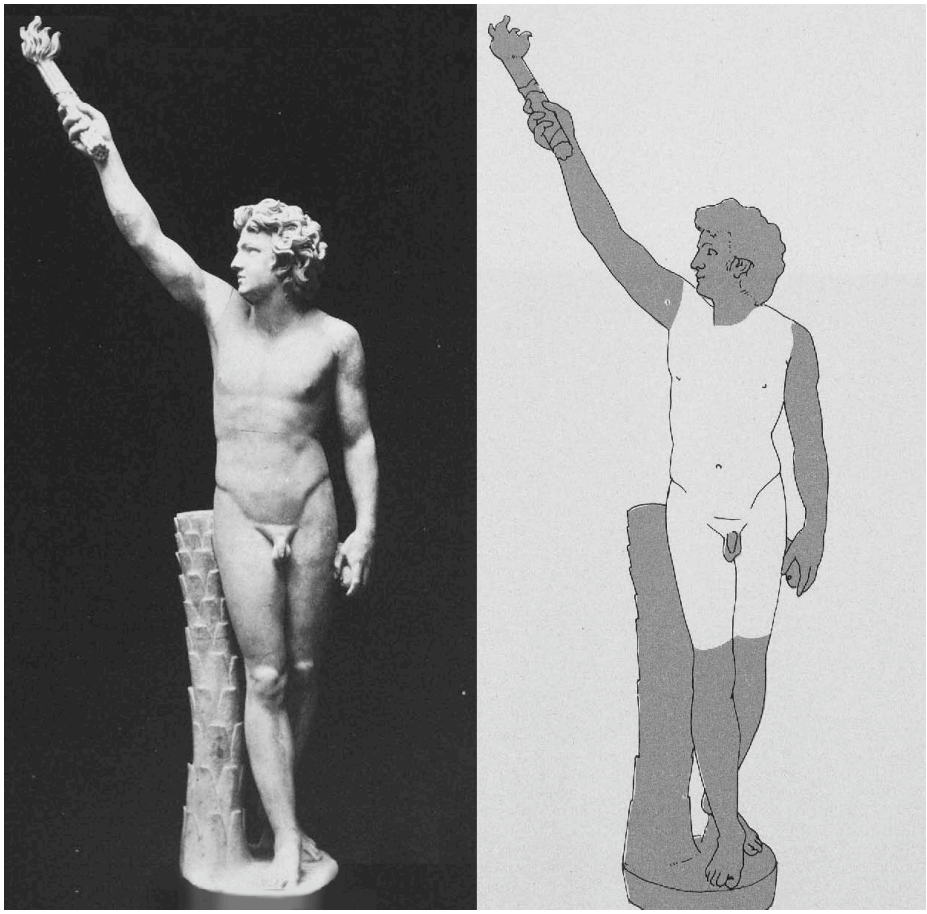

Fig. 3.10 *Dadophor*. The parts highlighted in grey are those added by the restorer Alessandro Algardi[77]

In these cases the artist's work prevails over the restorer's work. 'Restorers' such as Bernini and Algardi introduce themselves, to put it in Brandi's terms, into the time of the original artist's work.

In the eighteenth century, the excavations and findings in Pompeii, Herculaneum and Stabiae contributed to the emergence of archaeology as a science and to yet another sensibility in the field of restoration. A new kind of restorer, distinguished from the artist, had already emerged in the previous century, because of the great request for interventions fuelled by the antiquarian market. Now, in the climate of a new return to classical values, Johann Joachim Winckelmann theorized the principle of detectability

[77] *La collezione Boncompagni Ludovisi: Algardi, Bernini e la fortuna dell'antico*, ed. by Antonio Giuliano (Venice: Marsilio, 1992), p. 185.

of restorers' interventions from the original parts.[78] What was debatable for a restorer of the time, such as Bartolomeo Cavaceppi, was not the legitimacy of adding new parts, but the correct interpretation of original sculptures, which had to be supported by the cultural authority of experts. In addition, Winckelmann established a new critical principle, based on a strong connection between scholarship and restoration. Thus, the act of restoring is increasingly linked to the study of history and mythology as a valid aid for restoration. A positive outcome of this new ethics in restoration is the attempt to reconstruct ancient statues using only original pieces. In the case of additions of new parts, restorers started to avoid polishing them, in order to avoid concealing the differences between original and new parts.

The turning point in the history of sculpture restoration is the nineteenth century, when Lord Elgin moved many of the sculptures of the Parthenon from Athens to London. On this occasion Antonio Canova, expressing his appreciation for the beauty and harmony of the anatomy in the Greek sculptures, firmly opposed the idea of their restoration, simply because he believed that no one would have sufficient talent to work on them. The British Museum commission followed Canova's advice, giving an interesting reason: there was no need for the completion of Elgin's marbles because they were not part of a private collection. In a public institution such as the British Museum the aim of showing the fragments coming from the Parthenon was essentially educational. Not only the artists, but also collectors and the general public could appreciate the sculptures in the state in which time had consigned them to the present.[79] In Rome, Canova, on behalf of the Vatican museums, bought only those works that had been least modified by restorers in order to avoid the acquisition of forgeries and fakes. However, this criterion testifies to a step forward in the history of restoration, because

[78] Martini, p. 175-6.
[79] Rossi-Pinelli quotes a letter of Antoine-Chrysostome Quatremère de Quincy in which the French archaeologist and architectural theorist says that artists often like to see ancient sculptures in a state of mutilation. See Rossi-Pinelli, p. 296.

the principle of maintaining the works of art as they were became increasingly strong.

What really changed the attitude of restorers and contributed to a reflection on the theory of restoration was the increasing separation between private and public sectors, the conviction that public collections had an educational aim, and the concern to avoid improvident acquisitions (i.e. of fakes) by state museums. The definite outcome of this new attitude was the protection edict on artistic heritage promulgated in 1819 by Bartolomeo Pacca (responsible for administration of the Vatican properties).[80] This measure was to provide the basis for the Italian law of 1909 on the protection of Italian cultural heritage, a major point of reference for future legislation on this issue.[81]

In the twentieth century the purist idea that it might be possible to get closer to the original artists' intentions led to a new form of restoration called *de-restoration*, consisting in the elimination of parts added by artist/restorers over time. Only the clarity of Brandi's theory pointed to the impossibility of reversing the course of time and the latent subjectivity of these kinds of 'scientific' intervention that excluded the historical case of past restorations and their documentary – and often artistic – value.

3.2.3 Architectural monuments

Many architectural structures of the past are considered works of art and over time they have become symbols of the culture and the age in which they were conceived. Thus, they bear both the physical traces and the aesthetic message of their past. In addition, a historical building can also be a construction conceived as a *memento,* reminding people of a particular event, a national hero, human feats or achievements, or even the place where something was located or happened in the past.

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[80] Quoted in Rossi-Pinelli, p. 305.
[81] L. 1089 (1939), L. 310 (1964), D. Lgs. 22 January 2004, n. 41.

Recently, Giovanni Carbonara has underlined the link between the terms 'monument' and 'document', since any piece of evidence from the past might be considered a document. In this perspective, a monument becomes a document by the mere fact of being 'ancient', regardless of its artistic qualities.[82] This conception follows contemporary conservation theory approaches, which have extended the number of objects that are worth preserving. Muños Viñas goes so far as to say that, nowadays, so-called 'conservation objects' – or objects of 'cultural heritage' – 'are considered as such not because they are cultural, artistic, historic or old. They are considered as such because they work as symbols or as evidence for ethno-historic disciplines.'[83]

In the case of an architectural monument, a lacuna may involve its structure, when a part or an entire building has collapsed, or ornamental elements such as friezes, metopes, bas-reliefs, painted decorations, which can be partially or entirely damaged or may even have been removed. This section deals mostly with structural lacunae because they present problems inherent to architecture, whereas ornamental lacunae may be treated in a similar way as missing parts in other works of art. However, as we saw in the preceding subsection, a sculpture too may lack parts that are not merely ornamental but affect the statics of the sculpture itself. In this case, distinguishing a peculiar sort of 'architectural' lacuna as absolutely different from other kinds of lacunae appears very difficult.[84]

Broadly speaking, it is possible to distinguish three schools of thought about architectural restoration, which emerged in the nineteenth century and have been in conflict since then. The first conceives of restoration as *repristination*, namely the act of bringing something back to its 'pristine' status. The Latin word *pristinus* literally means

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[82] Giovanni Carbonara, 'Orientamenti del restauro in Italia: alcune premesse', *L'architetto italiano*, 1 (2005), 58-61 (p. 60).
[83] Muñoz Viñas, p. 62.
[84] See Tancredi Carunchio, 'La lacuna tra 'intero' e 'totale'', in *Lacune in architettura: aspetti teorici e operativi*, ed. by Guido Biscontin and Guido Driussi (Marghera: Arcadia Ricerche, 1997), pp. 1-10.

'former', thus *repristination* suggests that restoration can make the original like new, on the assumption that the passage of time can be reversed. Eugène Emmanuel Viollet-le-Duc is usually considered a point of reference of this conception. This idea of restoration calls to mind the oriental custom of renovating old buildings or statues that are objects of worship. In Japan, for instance, there is a Shintoist shrine, which includes a number of temples, made of Japanese cypress.[85] The two most important of these temples – Geku and Naiku – have been reconstructed every twenty years since they were first built about 1500 years ago.[86] As a consequence, these temples constantly appear new, even though the shape has been the same for centuries. The reason for rebuilding is not only the perishability of the wood. Rebuilding is also a ritual practice, based on the Shinto belief in the impermanence of all things (wabi-sabi), and it symbolizes the capacity of nature to regenerate itself. The oriental conception of time as circular, different from the western idea of linear time, is evident in such practices and traceable to various religious beliefs such as Hinduism and the idea of metempsychosis.[87] Indeed, in western culture objects of worship (e.g. a painting or a statue) have also been often 'restored', namely 'renewed', in order to maintain their appearance, as well as their sacred characteristics, unchanged over time.

The second way of thinking proclaimed the principle of not accepting any intervention on the original works, going so far as appreciating the process of decay not only as an unavoidable effect, but also as aesthetically pleasurable. In its extreme factions, exemplified by John Ruskin and William Morris, this school condemned any conservation activity on historical buildings.

The third school, which has been gradually emerging since the nineteenth

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[85] See <http://www.isejingu.or.jp/english/gegu/gegu.htm > [accessed 20 December 2009].
[86] The next scheduled rebuilding of Ise Shrine is due in 2013.
[87] On the same issue see Mary Brooks, Caroline Clark, Dinah Eastop, Clara Petschek, 'Restoration and Conservation: Issues for Conservators: A Textile Conservation Perspective', in *Restoration: Is It Acceptable?*, ed. by Andrew Oddy, (London, The British Museum, 1999), pp. 103-14 (p. 104).

century, is a compromise between the first and the second. It argues that is possible to intervene on the originals on the basis of well-grounded historical and aesthetic knowledge, taking care to make the work of restoration detectable. Alois Riegl, in the early twentieth century, was highly influential on this more critical approach to the conservation/restoration issue. He defined different 'values' of monuments, depending on their age, historical and artistic importance and use value. It was precisely the difference between monuments with or without a use value – those that were still 'in use' as churches, castles or civic buildings and those that were not, namely archaeological ruins – that allowed Riegl to treat the latter as different from historical monuments.[88] Louis Cloquet, a Belgian restorer, proposed a similar distinction, between what he called 'living' and 'dead' monuments, stressing that the difference was not a matter of age, since an ancient building could still be in use. For example, the Pantheon, a Roman temple of the first century BCE, was subsequently consecrated and used as a Roman Catholic church.[89]

Obviously, many intermediate shades of meaning between one position and the others lead to different approaches to restoration, which may be summarized and described both from an historical and a philosophical point of view. An exemplary model of the different approaches to the restoration of a classical monument before the reflections of the nineteenth-century theoreticians is represented by the two subsequent interventions on the Colosseum in Rome. In 1806-1807, Raffaele Stern intervened to consolidate the structure and prevent the collapse of the eastern part. The project consisted firstly in filling in the damaged arches with yellow bricks, secondly in building a counterfort with the same kind of bricks to support the east side of the outer section, and finally in adding another wall to reinforce the statics of the building.

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[88] About this approach and its impact on the modern way of conceiving historical monuments see also Françoise Choay, *The Invention of the Historic Monument*, trans. by Lauren M. O'Connell (Cambridge: Cambridge University Press, 2001).
[89] Carbonara, *Avvicinamento al restauro*, p. 91.

Surprisingly, Stern anticipated many future dictates of the modern theory of restoration. The brickwork that fills the interior of the arches is constituted of different material from the original and it appears to freeze the monument at a precise moment of its history, when the 1806 earthquake damaged it. Stern seems to have wished to respect not only the authenticity of the material, but also the damage suffered by the Colosseum through time. (Figs 3.11 - 12).

Fig. 3.11 Raffaele Stern's intervention (the filled arches) on the outer east section of the Colosseum (1806-07). Stern's respect both for the original material and for the ravages of time is noticeable. (Author's photograph)

Fig. 3.12 Raffaele Stern's counterfort on the extremity of the eastern external section of the Colosseum. There is no attempt to imitate the original structure or material. (Author's photograph)

The second intervention, twenty years later, by Giuseppe Valadier, was designed to consolidate and repair the western side of the monument and was conceptually opposite to Stern's. Valadier tried to imitate both the original shape of the monument, replacing the original with rebuilt parts (arches, columns and the cornices), and the original appearance of the travertine, covering the more economical bricks (also used by Stern) with a white patina '*a fresco*', no longer in existence.[90] (Fig. 3.13)

[90] A complete report of the restorations of the Colosseum and the Arch of Titus is provided in Jukka Jokilehto, *History of Architectural Conservation* (Oxford: Butterworth-Heinemann, repr. 2002, 1st edn 1999) pp. 77-87, and in Carbonara, *Avvicinamento al restauro*, pp. 87-94.

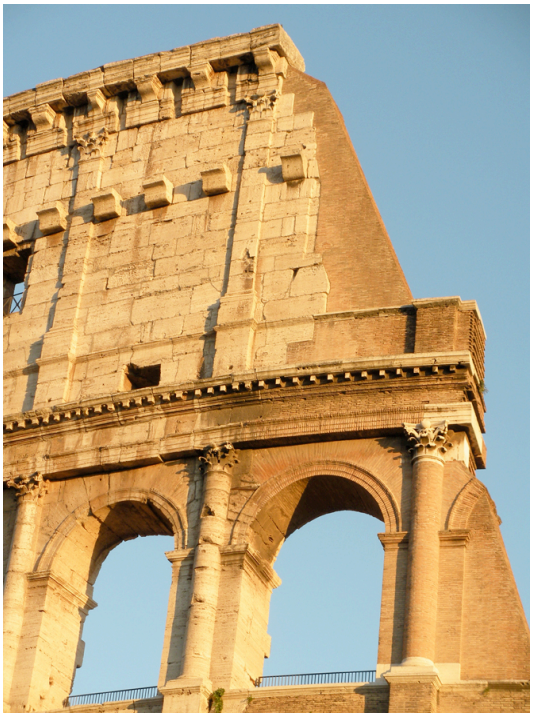

Fig. 3.13 Giuseppe Valadier's intervention on the outer west section of the Colosseum, imitating the original structure and material. (Author's photograph)

Curiously enough, Stern and Valadier had worked together some years earlier on the restoration of the Arch of Titus, which involved the dismantlement and reconstruction of the monument with the addition of some new travertine parts to the original marble. This operation, which can be partially defined as an *anastylosis* (literally the action of putting a column up again), takes a middle course between their later respective interventions on the Colosseum. Concern about the aesthetic appearance of the monument led Valadier to complete the restoration on the Arch of Titus after Stern's death in 1820, reconstituting the proportions and the massive building of the monument, but avoiding the imitation of the friezes and other decorative elements, which he replaced with bare travertine, making the new parts detectable from the original.[91] However, it remains to be ascertained whether Valadier used poorer material than the original (bricks instead of travertine in the Colosseum, travertine instead of

[91] In passing, it seems that the restoration of this monument assumed a political meaning: it reminded the Roman Jews of the end of French revolutionary egalitarianism. The restoration of the Pope's power symbolically coincided with the restoration of the arch of Titus, in which the destruction of Jerusalem by the Roman emperor had been celebrated.

marble in the arch of Titus) in accordance with a conceptual criterion of restoration or because of budgetary limits.[92]

These interventions of restoration on classical monuments in Rome seem to anticipate the fierce debate between the different schools of thought that erupted in France and in England shortly afterwards. In the cultural climate of Romanticism, the interest in national cultures and the free expression of individual creativity led to different approaches to the restoration and conservation of historical buildings, considered representative of the peoples' spirit. Examples of the new nationalist and historically nostalgic approach are the anastylosis of the Temple of Athena Nike in the Athens acropolis, a symbol of resurrection after the Greek war of independence from the Ottoman Empire in the 1820s, and the Gothic revival in England.[93]

In the past the most common approach of restorers of medieval buildings had been to renew them by adding parts that contemporary fashion could accept from an aesthetic point of view. Now a new method emerged, which was more respectful of the ancient architectural styles but still aimed at 'beautifying' them (one example is Durham Cathedral, restored by James Wyatt in 1794). Viollet-le-Duc went so far as to define the act of restoring a building not as preserving, repairing or rebuilding it, but as the act of reinstating it 'in a condition of completeness which may never have existed at any given time.'[94] This was his explanation for interventions aimed at completing damaged or never finished buildings, following an abstract idea of 'style' dating back to the time in which coeval monuments had been created. He applied the idea of renewing the damaged or destroyed parts 'in the style' of the original shape of the buildings, making copies or replicas, if supported with evidence, also of the statues and the

[92] Ibid., footnote no. 23, p. 89.
[93] Jokilehto, pp. 110-1.
[94] Eugène Emmanuel Viollet-le-Duc, *Dictionnaire Raisonné de l'Architecture Française du XI au XVI siècle*, 10 vols (Paris: A. Morel, 1869), VIII, p. 14: 'dans un état complet qui peut n'avoir jamais existé à un moment donné.'

decorative parts, using, if need be, other coeval monuments as models. Viollet-le-Duc was one of the most skilled architects of his time, and the improved knowledge of ancient building techniques gave him the confidence to plan his interventions on the basis of analogy. For instance, in the church of La Madeleine in Vézelay he chose to reconstruct the vaults in Romanesque style instead of Gothic, in order to give aesthetic coherence to the building, creating new flying counterforts in place of the old ones, although the new ones had never existed in such a shape. It is also important to highlight the other principle that inspired Viollet-le-Duc and his epigones: the effort to conceal their reconstructions, trying to harmonize them with originals.

John Ruskin represented the exact opposite approach to intervention on historical architecture. So deep was the influence of his writings on this issue that the word *restoration* itself came to assume negative connotations, whereas the word *conservation* embodied the new idea of favouring preservation work not only on monuments but also on antiques. In *The Seven Lamps of Architecture,* Ruskin did not develop a systematic theory of conservation, but rather upheld a number of principles that shifted the philosophy of intervention on buildings and other works of art from their aesthetic appearance to awareness of their historical value. Without making any actual distinction between painting, sculpture or architecture, he defended the untouchable creativity of the original artists and the authenticity of the material, claiming that *restoration* was 'a Lie from beginning to end.'[95] In his religious fervour for truth, Ruskin went as far as to declare that there was 'no question of expediency or feeling whether we shall preserve the buildings of past times or not. *We have no right whatever to touch them*.'[96] Even though he admitted that monuments need careful maintenance to avoid subsequent restoration – and stated that restorers should not care about 'the

[95] John Ruskin, *Seven Lamps of Architecture* (London: Smith, Elder, and Co., 1849), p. 180.
[96] Ibid., p. 181. Italics in the original text.

unsightliness of the aid'[97] – he concluded that 'when care will preserve [the work of art] no longer, let it perish inch by inch, rather than retouch it.'[98] In such statements, the romantic taste for ruins is emphasized by a concern for protecting 'the golden stain of time' and defending monuments from reconstructions based on analogy. In England Ruskin fiercely opposed the architects George Gilbert Scott, the author of *A Plea for the Faithful Restoration of Our Ancient Churches*, who was often considered a British Viollet-le-Duc, and Henry Dryden, who appreciated the documentary and historical value of every style and monument yet highlighted the need to put ancient buildings to use, as in the case of medieval churches.[99] Scott justified not only consolidation interventions with modern materials (e.g. cement and stone consolidants), but also the demolition of more recent parts of historical buildings and reconstructions 'in style', as in the case of the east wall of the choir of Christ Church, Oxford.[100]

Without retracing the entire debate on this issue, which would further extend the scope of this survey, it is nevertheless necessary to recall the most influential outcome of Ruskin's critical thought and William Morris's initiative: the foundation in 1877 of the Society for the Protection of Ancient Buildings (SPAB), the so-called 'Anti-Scrape Society'.[101] Undoubtedly, the merits of this private society were vast: among its achievements was a *Manifesto*, to which the fundamental principles of modern theories of conservation are indebted. The first was that all styles are important from an historical point of view and consequently all monuments are worthy of being preserved. The second was that restorers must avoid the arbitrariness of conjectural restorations and thus the danger of creating a deceptive fake. Finally, the *Manifesto* acknowledged the importance of forms of art other than the traditional ones of painting, sculpture and

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[97] Ibid.
[98] Letter from Ruskin to his father, dated June 1845, quoted in Jokilehto, p. 18.
[99] George Gilbert Scott, *A Plea for the faithful Restoration of Our Ancient Churches* (London: Parker, 1850). See also a summary of Scott's work in Carbonara, *Avvicinamento al restauro*, p. 128.
[100] Carbonara, *Avvicinamento al restauro*, p. 129.
[101] Jokilehto, p. 184.

architecture, broadening the idea of art to industrial products as well.

A few years after the establishment of the Anti-Scrape Society, a number of architects and theorists began to mitigate Ruskin's pessimistic and fatalistic views. In Italy Camillo Boito, while claiming that historical monuments could be likened to literary texts and thus should be conserved as they were, avoiding attempts at completion extended the same respect to subsequent additions to monuments over time, considering them as part of their historical value. Boito's *Carta del Restauro* (1883) inspired a number of laws dealing with restoration/conservation activities in Italy.[102] Boito highlighted the preference that conservators should give to maintenance rather than to restoration and the need to make additions or renovations detectable, using different material from the original. Conservators were encouraged to intervene as little as possible on the work and on subsequent alterations, and to document working steps through reports and photographs, indicating dates and main interventions through plaques on monuments.

Evidently, these rules represent an effort to reconcile the different schools of thought in the debate between restoration and conservation. Even though Boito's work as a restorer was not always consistent with his principles, his suggestions were a turning point in the history of conservation theory precisely because they came to be acknowledged as state guidelines in Italian law.[103] Gustavo Giovannoni built upon Boito's ideas, introducing the first university-level course in monument restoration. In addition, he contributed to the charter of Athens (1931), a seminal document for later European codes on restoration.[104] His approach to restoration represents a middle ground between Viollet-le-Duc and Ruskin's. He focused on the importance of the

[102] The relevant guidelines and legislation from 1882, 1902 and 1909 are cited in Carbonara, *Avvicinamento al restauro*, p. 214.
[103] Ibid., pp. 205-6.
[104] 'The Athens Charter for the Restoration of Historic Monuments' (1931) available at <http://www.icomos.org/docs/athens_charter.html> [accessed 30 August 2010].

historical case of monuments rather than on their artistic qualities. He stressed the importance of other professionals, such as chemists and geologists, in conservation work, and thereby called his approach 'scientific restoration'. In his view, the use of the most modern building techniques was preferable to the original ones in reinforcing crumbling monuments. He stressed the importance of every single phase (even modern) of ancient buildings as bearers of a specific moment of history. Furthermore, he drew attention to urban areas as 'monuments' in themselves, part of the history of a city, and opposed not only the demolition of old districts but also the construction of new buildings in historical areas.

Both the philological and the scientific concepts of restoration underwent a crisis after the Second World War. The destruction of entire areas posed new problems to restorers. The urgent need to intervene on a vast number of buildings and urban areas produced a more flexible policy of conservation and the filling in of architectural lacunae of monuments and urban areas. In fact, the emotional demand of people to see once again the monuments that represented their local culture even prompted *ex novo* reconstructions (e.g. the Abbey of Monte Cassino, Santa Trìnita Bridge in Florence).[105] In this context, a new conception of restoration was developed, which stemmed from Benedetto Croce's aesthetics and Martin Heidegger's philosophy. It was on these philosophical bases that Brandi grounded his theory of restoration, upholding the idea of the uniqueness of each work of art, rising from the new 'pure' reality created by the artist. The prerequisite of restoration is the 'recognition' of the work of art as such, and the ambition of restorers will be to reconstitute this imaginative knowledge in the consciousness of viewers, restoring the wholeness of the work, not merely the sum of the scattered parts, but its aesthetic and historical values. As a consequence,

[105] Recent terrorist attacks (e.g. Georgofili's tower in Florence - 1993, San Giorgio in Velabro and San Giovanni in Laterano in Rome -1993), earthquakes (Assisi 1997, L'Aquila 2009), and fires (Teatro la Fenice in Venice - 1996, Petruzzelli Theatre in Bari - 1991) have posed the question again.

Giovannoni's assumptions about a non-method, whose rule is a case-by-case intervention, came to be integrated into an organic theory. Brandi conceived the work of restorers as based on their critical expertise and their awareness of the twofold essence of a work of art: the aspect and the structure, the appearance and the material carrier. Even though many critics of Brandi's theory have argued that it does not fully apply to the restoration of architecture and three-dimensional objects, it established a well-grounded set of principles that inspired modern approaches to conservation and subsequent international guidelines.[106]

'Conservationists' and 'restorationists' have constantly debated principles and methods over the years, contributing to the production of charters, and to the general improvement of knowledge on original materials and building techniques.[107] On the one hand, the conservationists (e.g. in Italy Amedeo Bellini and Marco Dezzi Bardeschi) have criticized the transience and subjectivity of any aesthetic judgment, subject to time and fashion.[108] On the other hand, isolated voices of restorationists, such as Paolo Marconi, have expressed the view that material authenticity does not exist in architecture, since craftsmen are different from artist-architects.[109] As a consequence, Marconi theorizes restoration 'à l'identique', and the use of the same material and past building techniques, opposing the immediate identifiability of interventions, which are

[106] Melucco Vaccaro, for instance, criticizes the 'inadequacy' of Brandi's theory in dealing with archaeological material and architecture. See her 'Reintegration of Losses', in Stanley Price, Talley Jr., Melucco Vaccaro, pp. 326-31 (pp. 329-30). In the twentieth century Brandi's theory tends to strongly influence the theory of restoration in Italy as well. Thus, many of the examples in critical writings on the issue are drawn from the Italian context. This is not to say that scholars from other countries have not made important contributions: on this issue see Jokilehto, pp. 228-41 and pp. 245-94.

[107] See Stefano Francesco Musso, 'Le carte del restauro', in *Che cos'è il restauro? Nove studiosi a confronto*, ed. by Torsello pp. 118-25.

[108] See Benito Paolo Torsello, 'Amedeo Bellini', in *Che cos'è il restauro?*, ed. by Torsello, pp. 21-4; Marco Dezzi Bardeschi, *Restauro: due punti e da capo* (Milan: Franco Angeli, 2004).

[109] A number of scholars argue against this idea, among them Michele Cordaro, who asserts that other forms of art (painting and sculpture) also have a 'use value', and that the architect, even though s/he is not the material realizer of the work, has the skill to predetermine the result and the aspect of her/his project. See Michele Cordaro's introduction in Cesare Brandi, *Il restauro: teoria e pratica* (Rome: Editori Riuniti, 2005), pp. xi-xxxvi (p. xxviii).

in any case detectable to an expert's eye.[110] In the same vein, he defends anastylosis, at least in those cases where a monument with a particular artistic and political value has been destroyed during a war or a blaze, or has undergone damage because of an earthquake.[111]

This 'museological' approach, which aims to fill in different kinds of lacunae (in structures and decorations), is designed to meet educational ends and can prove to be a successful strategy for attracting tourists and art lovers. For instance, in December 2009 a projection of amazing colours on the friezes of the Ara Pacis Augustae in Rome evoked the hypothetical original appearance of the monument at the time when it was first consecrated to the Emperor Augustus in 9 BCE. (Fig. 3.14)

Fig. 3.14 The Ara Pacis Augustae in Rome. On the left the Saturnia Tellus as it appears today. On the right a virtual reconstruction of the original first century BCE colours through a projection on the monument[112]

Since scholars consider the current white, 'classical' appearance of the monument to be not an original feature (as in many other ancient monuments), this kind of evocative exhibition has the merit of satisfying both those who would like to reverse

[110] Marconi, *Materia e significato*, pp. 118-27.
[111] See the documentation on the restoration work on the Main Fountain in Perugia (after the earthquake in 1997) in ibid., p. 135-45 and on the reconstruction of Mostar Bridge, bombed and destroyed in 1992, in Marconi, *Il recupero della bellezza*, pp. 152-7.
[112] <http://en.arapacis.it/mostre_ed_eventi/eventi/i_colori_dell_ara_pacis__2> [accessed 10 August 2010].

the course of time and make the 'original' monuments' appearance visible, and those who would preserve their present state 'as is'. (On the same issue see section 3.1 in this thesis).

To summarize, the critical balance of these two perspectives has produced different technical solutions in architectural restoration (change of material or surface treatment), yet all of them are still rooted in Brandi's theory. The main principles, even though accepted at different degrees and critically interpreted by scholars and restorers, remain: detectability of restoration interventions, reversibility and documentation of the completed work.[113]

3.2.4 Films

After this discussion of restoration principles as applied to the problem of lacunae in the main figurative arts, some comparisons can now be made with approaches to lacunae in films. The most obvious difference between the restoration of paintings, sculptures, architectural monuments and films is that in the former cases the restoring interventions are carried out on the originals, while in film restoration, as in the reconstruction of literary texts, restoration does not necessarily take place on the 'original material'.[114] With film, restorers work on a copy and the previous version is never irrevocably lost whereas a restored painting automatically becomes something else. However, it is possible to draw some analogies between the different fields of restoration.

A few preliminary remarks are necessary in order to clarify the concept of lacuna in film restoration. The term lacuna implies that something is lacking in what

[113] See P. Philippot, 'Historic Preservation', pp. 359-61.
[114] The concept of 'original' in film restoration has been discussed in 1.3. On philology and the contribution of textual criticism in reconstructing literary texts see 4.2.

was once a supposed whole work. It is important, however, to bear in mind that in the case of silent films, 'multiple object[s] fragmented into a number of different entities equal to the number of surviving copies', in Cherchi Usai's words, the concept of lacuna must be brought to bear on each different version of the film, not on the 'Ur-film' itself.[115] The multiplicity of different copies (produced through parallel cameras in different versions for different markets) and material (negatives and prints) involved in a silent film leads Cherchi Usai to assert that a film can be theoretically described only as an 'ideal-type' – adopting Max Weber's term – 'the first positive print, stemming from the original negative, projected for the first time.'[116]

Unfortunately, use itself accelerates the process of decay of a film (e.g. colour fading) and causes mechanical damage (e.g. scratches) in prints, taking part of the film's information away. Hence, every single projection will add 'lacunae' to the original print; the same will happen to the original matrix (the negative) during the print process, to the extent that the negative will be useless and very different from the original conditions after a number of prints. Thus, to state the issue more boldly, though different versions of a film will have varying degrees of lacunae, a film can be 'completely' free from lacunae only in a potential state (when the *Ur-print* has not yet been projected), given that the very act of showing a film subtracts information from it.

These preliminary considerations are necessary to problematize the very concept of 'whole' in the case of silent films. It is preferable to consider a film, even an ideal-type, as *tending* towards 'wholeness' rather than as being 'whole'. This view is closely linked to the idea that 'original' is a problematic term when applied to a silent film; indeed, Cherchi Usai has argued that it makes no sense at all in this field. He takes into account different copies and versions of two films – *The Cossack Whip*, directed by

[115] Cerchi Usai, *Silent Cinema*, p. 160.
[116] Paolo Cerchi Usai, 'Il film che avrebbe potuto essere, o l'analisi delle lacune considerata come una scienza esatta', in *Il restauro cinematografico*, ed. by Venturini, pp. 125-32 (pp. 127-8).

John H. Collins, 1916 and *Intolerance*, directed by D. W. Griffith, 1916 – stressing that restorers ought to declare that they are working on *that* specific version, adding details about the material (e.g. colours taken from one copy, editing from another one) that they are using for this purpose. In brief, restorers should abandon the idea of boasting about the restoration of *the* film and should refer to the work simply by its title and specify the version they are trying to reconstruct.[117] In this way, their work, and the acts of interpretation it involves, would be seen as giving rise to another 'original' film with a distinct identity – that of 'restored film' – created at a given time under specific conditions through the work of particular individuals. In this way a restored copy will bear the weight of a new historical case (a 'historic instance' in Brandi's words) that will add another stage to the film's existence in time.

However, even accepting this theoretical frame, it is possible to distinguish two main types of lacunae in film: figurative and narrative. The first involves loss of information within a single frame. This loss affects the appearance of the image, literally 'disfiguring' it (Figs 3.15 – 3.16). Taking into account a widely accepted terminology in film restoration literature, archivists and scholars indicate these kinds of lacunae as damage. Such damage is to be distinguished from defects (dating back to the time of the film production and due to technical limitations) and errors (further alterations deriving from subsequent processing work).[118]

Canosa minutely pinpoints different kinds of 'figurative' lacunae on the basis of size and location: they may be 'punctual' if they only affect a frame or a part of it, 'local' if they affect a short section of film, 'extended' if they involve a reel or more.[119] As well as the extent of the lacunae in length, it might be useful to locate them in depth: they may be 'superficial', if they only nick the emulsion, or 'deep', when they spoil the

[117] Ibid., p. 129.
[118] See Wallmüller, p. 79.
[119] Canosa, 'Immagine e materia', p. 34.

base as well. Considering the frame area, instead, lacunae may be ‘central’, ‘marginal’, or ‘extra-marginal’. In the latter case lacunae affect only the structure (e.g. perforations) because they are outside the frame outlines; as a consequence, they do not spoil the image, as ‘central’ and ‘marginal’ lacunae do.

The second type of lacunae, that is, the lack of frames in a sequence, may be defined as ‘narrative’ lacunae, since they alter the flow of information coming from the film as a narrative text. In addition, errors arising from editing, such as misplaced shots, and cuts made by censors can produce narrative lacunae. Wallmüller adds alterations deriving from copying processes as well (i.e visible framelines, flickering, image unsteadiness in projection).

However, the way in which restorers should treat these lacunae is debatable. The likeliest route for restorers would be to adopt a case-by-case criterion, assessing the historical value of alterations, such as defects that were part of the original work, and errors and censorship cuts, which can testify to the way in which an audience watched a film in a specific historical context (see in 3.1 the case of the breeches added to Michelangelo’s biblical figures in the Sistine Chapel, which conservators decided to keep as historical evidence).

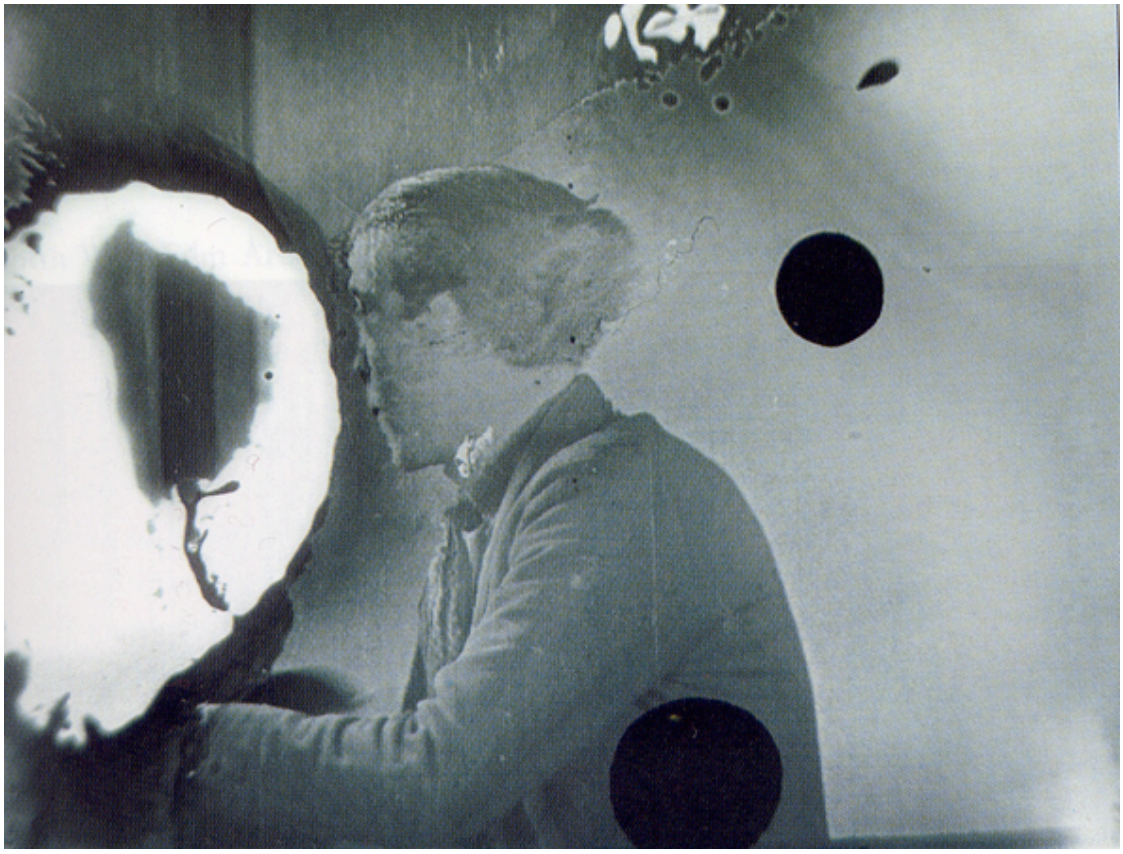

Fig. 3.15 Example of figurative lacuna in a burned frame taken from a nitrate film coming from the Film Archive Montreal. This unidentified frame was displayed without reference at the Galerie Michèle Chomette (Paris) in March-April 1998 in Éric Rondepierre's exhibition 'Moires'[120]

Cherchi Usai, using time as a point of reference, introduces the terms 'diachronic' and 'synchronic' lacunae, where synchronic relates to the single visual unity (frame), while diachronic refers to the lack of narrative sections.[121]

[120] Éric Rondepierre, 'A Fascination with Decomposition', trans. by Catherine A. Surowiec, in *This Film Is Dangerous*, pp. 602-06 (p. 604).
[121] Cerchi Usai, 'Il film che avrebbe potuto essere', in *Il restauro cinematografico*, ed. by Venturini, pp. 131-2. Interestingly, Cerchi Usai adduces the spectators' flinching as a cause of individual narrative lacuna. This seems to strengthen the link between film appearance and projection.

Fig. 3.16 Example of figurative lacuna in a scratched frame. This kind of damage usually affects a group of consecutive frames, so that it can be defined as a diachronic lacuna.[122] This unidentified frame was also part of Éric Rondepierre's exhibition 'Moires' (see Fig. 3.15)

This classification requires subtler distinctions in the case of lacunae which, though not altering the image figure – and therefore not classifiable as lacking frames – are internal to a sequence and prevent the narrative flow from being fully understood by the audience: such is the case of coloured films that have lost their colours because of fading or inappropriate printing. For instance, in the Spanish, Russian, and American b/w versions of *Cabiria*, the gesture of Cabiria's father, who appears frightened and suddenly draws back from a window raising his arms up to the heavens, is almost impossible to comprehend, since the red colour that was supposed to imitate the effects of the eruption of Etna is lacking. (Fig. 3.17)

[122] Ernst Kieninger, 'Tradition Is the Preservation of the Nitrate Film Heritage in Austria', in *This Film Is Dangerous*, ed. by Smither and Surowiec, pp. 409-13 (colour section 2, pp. 546-47).

Fig. 3.17 *Cabiria* (1914), first episode. Cabiria's father is frightened by the eruption of Etna. Without the narrative value of red the scene is less easily understandable

Another example of the narrative function of colours was provided in the previous section on patina (3.1): the scenes set at night in *Nosferatu, Eine Symphonie des Grauens*, are incomprehensible if a blue colour is not applied on the print. In these cases the distinction between 'figurative' or 'narrative' lacuna is debatable, since optical elements (colours) have a narrative value.

Among the narrative lacunae – besides the cases of missing scenes, and faded or lacking colours – the lack of intertitles can be listed as particularly important from a narrative point of view. Intertitles provide dialogue, plot elements, and character details. Sometimes intertitles even have a literary dignity, as in the case of *Cabiria*'s intertitles written by d'Annunzio. In most cases they are useful not only in order to follow the plot (usually there are progressive numbers on each title, which helps to ascertain the completeness of a film), but also because they provide information on the culture of the

time and on the history of prints (see the case of *L'Errante*, where its French intertitles seem to suggest that the copy came from Italy, because of the many spelling and grammar mistakes).

In the work of restoration, it is also important to consider the font and size of typographic characters, which can have some aesthetic appeal as well. Intertitles are often framed in decorations whose patterns give useful information on films (e.g. the production company's distinctive mark, as in the case of the small rooster of the Société Pathé Frères). The font size can be another narrative element, since in silent films fonts could imitate the emotional tone of a scene. For instance, Eisenstein extensively used this means in *The Battleship Potemkin* (1925) in order to convey pathos and to enhance the emotional side of a number of scenes (see the last episode in which the Battleship Potemkin sails against the tsarist fleet). In the reconstruction of intertitles, when the font and size are no longer available and the only source is extra-film material such as film scripts and censorship documents, it is now customary for restorers to distinguish them from the original intertitles, using modern fonts, different from the original, without any decorative pattern.[123] This choice corresponds to the well-known criterion of recognizability, which restorers of paintings, sculptures and monuments have long welcomed into their practices.

Beyond the occurrence of lacunae internal to films, classifiable according to elements such as time (frames and scenes), size and location (scratches, stains, dust, and missing colours) it is also useful to add 'environment' as a source of lacunae in the appearance of a film. Silent films were made to be shown on screens and yet the cinematic experience of a contemporary audience will be different from the past because of a great number of factors that can alter, in various ways, the 'original' appearance of a silent film: the screen reflectance, the projector light, the speed of

[123] On the issue of reconstructing intertitles see for instance the *Maddalena Ferat* case study.

projection, the projection aspect ratios, the projection speed, the transparency of nitrate base compared to triacetate or polyester bases, the difference between orthochromatic and panchromatic film stock, different techniques in making colour films, and finally the presence of live music, commentators' or actors' performances during the projection.[124]

Cherchi Usai lists yet more external factors to 'environmental' lacunae, such as projections of coloured light through filters on the screen (as well as the slight blue filter created by smoking, allowed in cinemas until recently, as I have already mentioned), the architecture of movie theatres, smell diffusers (*Smell-o-rama*, *Odorama*), and further on he mentions the audiences' visual culture, which was necessarily different from today.[125] In passing, one might observe that the question of environmental film lacunae seems to resemble the parallel debate in architectural conservation of the last few years, in which architects/restorers have broadened the discussion on the restoration of monuments to include the preservation of urban areas. Surely, it is impossible to fill in all these different kinds of lacunae. Yet, here Brandi's theory offers two rules that sound as a consolation to restorers' ears: 'only the material form of the work of art is restored' and 'restoration […] cannot presume that time is reversible or that history can be abolished.' [126]

In fact, Cherchi Usai's aim is to comment on the specificity of film restoration, criticizing the links between films and literary texts, and between film restoration and philology, that many scholars have made. He stresses that there are more material elements to take into account in such variable entities as silent films than in reconstructing a literary text. Moreover, in film restoration a critical apparatus does not exist, whereas philologists have at their disposal conventional symbols, special printing

[124] See ch. 1 about this issue.
[125] Cerchi Usai, 'Il film che avrebbe potuto essere', in *Il restauro cinematografico*, ed. by Venturini, p. 132. See also section 4.2 in this thesis.
[126] Brandi, *Theory of Restoration* , p. 51 and p. 64.

devices and footnotes in order to signal their interventions and critical hypotheses. As a consequence, a person reading a critical edition of a literary text can 'reconstruct' the work in his or her mind, choosing among a range of variables, whereas this is not possible when watching 'restored' films, which are necessarily the result of restorers' choices.[127] However, after the painstaking (and costly) care of restoring and reconstructing films, greater attention should be given to the projection, the moment in which the work is unveiled, in order to avoid mistakes that could show a film lacking portions of images.[128]

After examining the possible typological classification of film lacunae, it is now necessary to investigate ways to compensate them. Among the 'figurative' lacunae (without taking into account the flow of frames and time), the most common form of damage is the scratch. Usually these affect a group of contiguous frames, generating annoying vertical lines (the so-called 'rain-effect') on the screen. Scratches may assume different kinds of appearance in shape, such as parallel lines (tramlines) or small crosses (cinch marks), and in colour: they may be white if scratches are on the negative, black if they are on a previous copy used for duplication. A widely-used technique to conceal this damage is wet-gate printing. This consists of rolling the film into a special device containing a solvent under pressure. This liquid has the same refraction index of nitrate, the silent film base, so that when another camera (an optical printer) reproduces the damaged part immersed in the solvent, all scratches 'disappear' and in the new negative (and consequently, in the new print) the film is free from this flaw. (Fig. 3.18)

[127] On this issue see 4.2.
[128] On the issue of aspect ratios see Dan Yakir, 'Off with Their Heads!' in *Protection and Preservation of Films*, ed. by Ramon Espelt (Barcelona: Oficina Catalana de Cinema, 1988), pp. 168-9. See also the unfortunate case of the 20 March 2006 projection in Turin of the restored silent version of *Cabiria*, described in section 2.4 in this thesis.

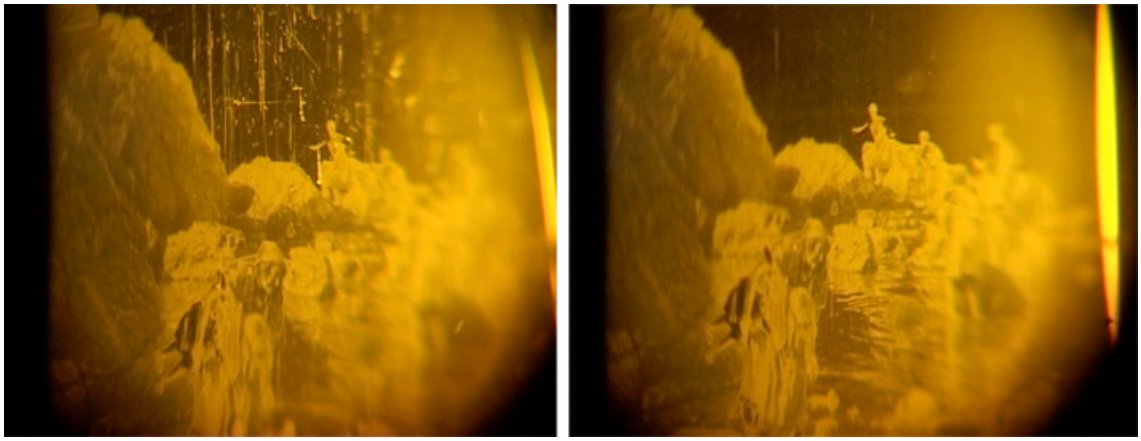

Fig. 3.18 On the left: a damaged frame. On the right: the solvent liquid in the wet-gate printer gives the optical illusion of neutralizing the scratches on the frame.[129] This technique resembles the virtual restoration of coloured decorations of the Ara Pacis Augustae in Rome, since in both cases the original remains untouched

In fact, the scratches will remain on the original frame, while the copy will appear scratch-free. If film restoration is compared to painting restoration, it is to be noted that in the latter case restorers, after deciding to repair *craquelure*, regardless of the technique used, intervene on the original work, whereas in film restoration they try to obtain a copy, hopefully without damage. (Fig. 3.19) Alternatively, another photographic technique consists in using a diffuse light in the printing process. Given that scratches generate a visual disturbance due to light refraction when the beam orthogonally hits the film surface, a diffuse source of light prevents this defect. Moreover, there is no need to use chemical solvents, which are not environmentally friendly. Unfortunately, this method introduces a photographic distortion that results in lighter contrast than the original source, so that the final appearance may be slightly foggy.[130]

Restorers can apply this technique only if scratches are superficial and not a consequence of defects generated by previous printing processes. In the latter case, it will be impossible to conceal scratches, unless digital software is used. The same

[129] Pictures taken by the author at PresTech London Laboratories with the permission of João de Oliveira (28 July 2006).
[130] Cerchi Usai, *Silent Cinema*, p. 59.

happens with scratches on the emulsions, which are more difficult to treat, since a portion of the image will be lost.

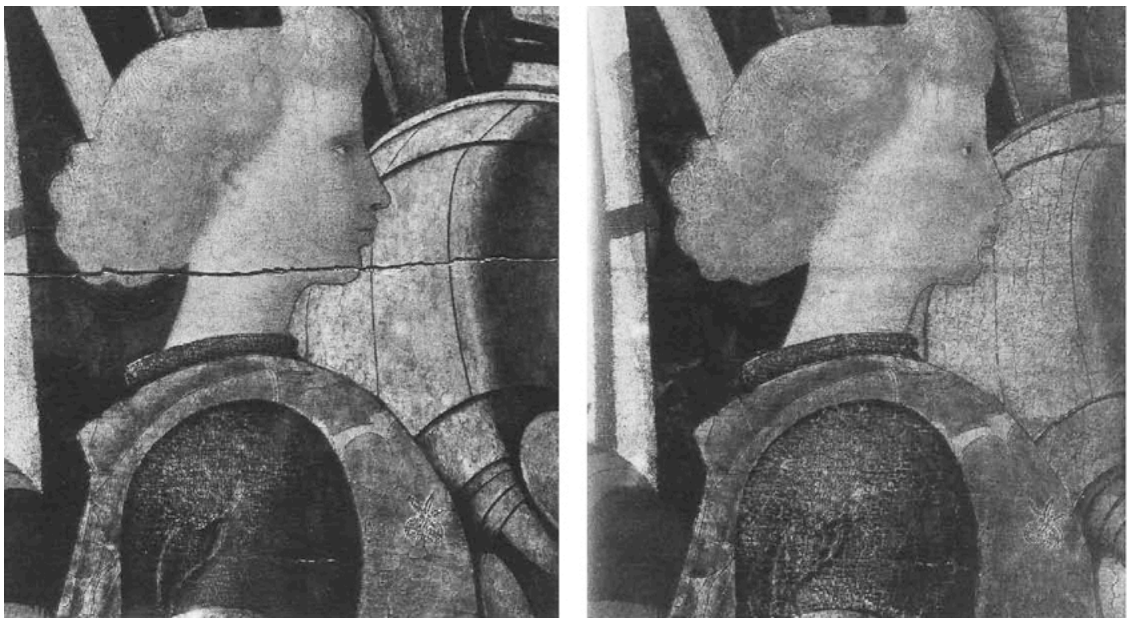

Fig. 3.19 Detail of Piero della Francesca's *Battaglia di san Romano* before and after restoration in 1963 at National Gallery in London. Photographs here serve to document the appearance of the painting before restoration, since the intervention took place on the original work of art [131]

Another technique involves the use of a different medium: digital. Through dedicated software, such as Revival Da Vinci, it is possible to eliminate damage (scratches and tears) and remove dirt, dust and stains.[132] A computer scans (digitizes) and stores audio-visual data from films, then it retrieves missing information from the contiguous undamaged areas or frames, and finally it reconstructs a new frame. This method is called 'interpolation' and it promises to be the new frontier of film restoration. Actually, since a film is apprehended in its duration and it is not sufficient to intervene only on a single frame, a common flaw of interpolation may be a flicker effect generated by the alternation of frames bearing the signs of time and others that

[131] Figure taken from Martini, p. 261.
[132] <http://www.blackmagic-design.com/davinci/revival/> [accessed 7August 2010].

appear brand new.[133] Another problem can arise from automatic or semi-automatic restoration, in which algorithms are not completely able to recognize and distinguish a scratch or dust particles from intrinsic movement of objects. Fossati cites the case of the restored copy of Disney's film *Snow White and the Seven Dwarfs* (1937), where all the diamonds in the mine were eliminated by mistake, since they were identified as extraneous objects, such as shining particles.[134]

Regardless of the possible drawbacks of digital means in restoring films (e.g. digital artefacts, costs, time), which technical development could overcome in the future, one must be aware that manipulating a silent film in this way means breaking away from the original way of working on it. It means taking another step away from the original aesthetic experience, since the 'restored' film will be a sort of genetic mutation. This is why Wallmüller clearly distinguishes *digital film restoration* from *digital treatment*, pointing out that the aim of restorers ought to be to produce a 'projectable film', restoring its functionality, otherwise the final product of their work might not even be defined as a film.[135] In addition, restorers might not work directly with the software, leaving the task to other people, namely technicians trained in using this tool, to take micro-decisions – 'decisions taken in real time and that affect the way major ('bigger') decisions are implemented' – which may influence the final result.[136]

To return to narrative lacunae, restorers have at least three options in filling in missing scenes. First, they can resort to other copies or negatives, if available, and try to retrieve the missing parts. In this case the problem will be to harmonize photographic characteristics that might be very different. (Fig. 3.20)

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[133] Andreas Busche, 'Just Another Form of ideology? Ethical and Methodological Principles in Film Restoration', *The Moving Image*, 6 (2006), 1-29 (p. 20).
[134] Fossati, 'From Grain to Pixels', pp. 135-6.
[135] About the limits of digital restoration see Wallmüller, pp. 85-8.
[136] About micro-decisions see Muñoz Viñas, pp. 133-9.

Fig. 3.20 On the left: a shot of *Cabiria* taken from a print with poor contrast. On the right: the end of the same shot reconstructed adding frames taken from a print with better photographic qualities. De Oliveira's aim was to reconstruct the complete scene, regardless of the impossibility of achieving a balance between the different prints[137]

Second, another solution might be to insert black 'neutral' stock that visually indicates the lack of a sequence or a group of frames. The drawback of this is that the audience might feel they were watching the film in fits and starts. The appropriateness of such interventions is debatable and today restorers usually take case-by-case decisions (size and length of the lacuna are among the principal terms of reference). A good alternative seems to be to insert a still frame (the last one of a scene) with an explanatory caption. Apparently, Rick Schmidlin and Richard Koszarski were the first to achieve this method in reconstructing *Greed* (directed by Erich von Stroheim, 1924) in 1999.[138]

Third, it is possible to insert new intertitles that summarize what is lacking. Cherchi Usai is critical of this kind of solution, because it would take away viewing pleasure, replacing it with what he defines as a scholars' obsession for completeness.[139] Arguably, restorers need to fill in film lacunae somehow, regardless of their size, since if films were left in a mutilated state it would be difficult to follow the plot. In other forms of art (painting, sculpture, architecture) it is possible to leave the work untouched.

[137] The author took these images from the restored print of *Cabiria* (2006) preserved at the MNCT (Turin) with the permission of the director Alberto Barbera.
[138] See <http://www.welcometosilentmovies.com/features/greed/recon/mmills.htm> [accessed 30 August 2010].
[139] Cherchi Usai, *Silent Cinema*, p. 65.

In the history of restoration a school of thought has defended the theory of non-intervention or 'purist' conservation. One need only think of Ruskin, who even appreciated the aesthetic appeal of decay, or Brandi, who upheld that 'if a work of art, which is not a sum of parts, is physically fragmented, it will continue to exist as a *potential whole* in each of its fragments.'[140] Conversely, people do not enjoy a film in a fragmented state; indeed the audience demands of restorers that restored films should look brand new. But such a request mirrors the Venetians' request for a replica belltower after the building's collapse in 1902, and it amounts to levelling the entire history of film to adopt a contemporary perspective and appeal to today's audiences.

In the case of faded or lacking colours, there are different methods to be used: restorers' choices correspond to different theoretical criteria.[141] Three possibilities can be listed: one is to leave the copy of the film to be restored in b/w, without adding conjectural colours, as Cherchi Usai suggested in the case of *LDP* restoration; secondly, one might reproduce the colours as faithfully as possible to their present state; a third possibility is to attempt to retrace the appearance of the original colours.

Interestingly, these different approaches parallel the various attitudes and theories that restorers have followed over time in other fields of restoration. Leaving the film in black and white seems to resemble the 'purist' conservative approach, as preached by Ruskin. Reproducing colours faithfully is comparable to the philosophy of intervention that is behind the work of architects and restorers from Stern to Giovannoni. The quest for 'the original colour', on the other hand, involves an imitative criterion that embraces (or is not far from) Viollet-le-Duc's theoretical position. Apart from the obvious difficulty one may encounter in trying to reproduce the hue and density of original stencil, tinted or toned colours (or even the mix of different

[140] Brandi, *Theory of Restoration*, p. 57.
[141] About the different techniques and criteria adopted in restoring film colours see *LPD* case study in this work.

techniques) through modern material (e.g. multilayer film stock), this imitative approach might lead to distortions or even evident mistakes. If restorers do not consider the possible decay of colours, they might imitate an appearance of the film that is actually historically inaccurate. (Fig. 3.21) Such was the case of the *Maddalena Ferat* restoration, where the visual match between the colour on the original nitrate print and the colour realized through the original technique (tinting) on a modern film stock yielded an unfortunate result, since the original colour had already deteriorated (see fig. 2.6).

Painting restorers have fiercely debated a similar issue when discussing total, partial or selective cleaning techniques, which called into question the presumed restorers' objectivity.[142]

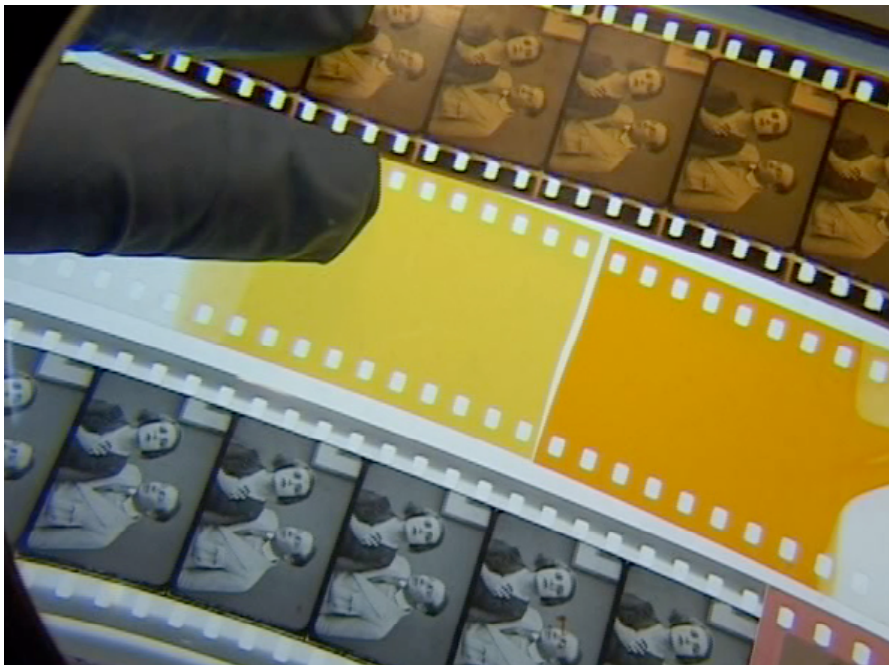

Fig. 3.21 Picture taken by the author during the restoration work of Luigi Boriosi at the Augustus Color Laboratory (Rome) on *Maddalena Ferat*. The attempt to reproduce the original colours through a visual match is a flawed practice, as modern technical devices, such as the light of Xenon lamps, misrepresents the appearance of the original film in projection

However, precisely this criterion of imitating the supposed original colours

[142] See the different positions of Brandi, Walden, Gombrich and Hedley on patina in 3.1 above.

seems to be the one followed by most film restorers today, though the tendency is mitigated by a scientific and critical approach. Cherchi Usai, for instance, referring to the availability of digital means, defines film restoration as a work of simulation.[143] De Oliveira constantly follows this assumption, even when using analogue printing techniques. His aim in restoring *Cabiria* was to reach the same appearance the film might have had in projection, at a time when carbon arc lamps, which had a different spectral distribution compared to the modern Xenon lamp, were in use. Thus de Oliveira's principle is to manipulate the modern source (e.g. the colour dyes in the modern print stocks) in order to obtain a result considered more faithful to the past viewing experience. In fact, in reproducing the film's material properties there remains a gap, a difference. This occurs not only – as Read and Meyer state from an historical point of view – because every restoration creates a lacuna compared to the original, but also because this difference/distance is needed in order to simulate the original ephemeral appearance through modern equipment.[144] De Oliveira was forced to modify his equipment and varied the grading through filters in order to reach this goal while he was working on *Cabiria*.[145]

Drawing to a conclusion, it is now time to answer the question about the extent to which art restoration principles are applicable to film restoration. In the last thirty years – in particular since 1980, when the General Assembly of UNESCO approved the 'Recommendation for the safeguarding and conservation of moving images' – film conservators and restorers have increasingly engaged in debate on a common methodology, in search of guidelines that needed to be well rooted in granted and recognized restoration principles.[146] This theoretical reflection has even led to a discussion on the definition of 'film', since the very nature of audiovisual material is in

[143] Busche, p. 15.
[144] *Restoration of Motion Picture Film*, ed. by Read and Meyer, p. 75.
[145] See *Cabiria* case study (2.4) for a detailed documentation on this issue.
[146] <http://www.unesco.org/webworld/ramp/html/r9704e/r9704e03.htm> [Accessed 30 August 2010].

itself debatable, considering, among other factors, the rapid development of digital technology. Without delving further into terminological questions, it is possible to observe that the principles that have inspired film restorers in filling lacunae basically reproduce the concepts of recognizability, reversibility and documentation, which have been discussed in relation to other forms of restoration.

Actually, the first principle is only partially fulfilled by film restorers, who often seem more concerned about the completeness both of the figurative and of the narrative film features than with the recognizability of their intervention. The first aim of film restorers is to create a sort of facsimile, presented as an 'original' to the audience, whereas the restored film becomes another element, an approximation to the source material both from a figurative and from a narrative point of view (a 'simulation' in Cherchi Usai and de Oliveira's words). The second principle is easier to respect because of the very nature of films, which stem from matrices such as negatives or other source elements (e.g. other prints), which restorers should use without damaging them, in order to leave the possibility open to further research and interventions in the future. The third principle asserts the need to document restorers' interventions, fulfilling the scientific protocol to make data available to the academic community and to future restorers in order to contribute to later possible works of restoration. Apparently, on this path, in digital restoration the awareness of restorers of the paramount importance of the material data, external to the image itself (perforations, edge data such as the name of the production company or stock manufacturer marks, colour indications), has led to the growing use of continuous scanning.[147] This technique allows one to register a complete representation of the film strip and represents a sort of technological evolution of palaeography and codicology.

In the reconstruction of films, in 1997-98, during the restoration of *Menschen*

[147] Rudolf Gschwind, 'Restoration of Movie Films by Digital Image Processing', in *Preserve Then Show*, pp. 168-78 (pp.174-5).

am Sonntag (directed by Curt and Robert Siodmak, Edgar G. Ulmer and Fred Zinnemann, 1929) Martin Koerber attempted to standardize the documentation of film restorer's choices through a protocol Microsoft Excel document.[148] Unfortunately, it seems that few archives and restorers have adopted this protocol and documentation of film restoration is still a sensitive issue. In practice, detailed and accurate reports on restoration work are not always easily obtainable. The documentation on the restoration of the case studies provided in this work consists in a notice only a few lines long, inserted as a head title at the beginning of the restored prints, which summarizes the work done. Another possible source of information might be found in the files preserved at the film archives (CN and MNCT). Unfortunately, in the case of the CN, these contain only administrative documents and there is no evidence of technical reports and data that researchers and future restorers might seek out: cleaning, repairing, printing procedures (e.g. grading, of paramount importance for colour reproduction through analogue equipment). Another possible source may obviously be traced in the scientific articles that restorers might write. Unfortunately, in this case as well, it often happens that restorers do not provide minute technical documentation, but only a summary of the work done. This is probably due to the fact that the CN and the MNCT do not have film laboratories and entrust external companies with the task of conducting the technical work. These kinds of collaborators may not be enthusiastic about sharing their know-how with others, be they scholars or practitioners, since considerable economic interests are at stake. As a consequence, such a secretive attitude can jeopardize one of the most important principles of restoration ethics, which is precisely that restorers should always document their work. Donata Pesenti Compagnoni – Chief Conservator of the MNCT – defines this state of affairs as 'an unresolved issue'[149].

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[148] *Restoration of Motion Picture Film*, ed. by Read and Meyer, pp. 237-40.
[149] Donata Pesenti Compagnoni, 'The Preservation, Care and Exploitation of Documentation Related to the Cinema: an Unresolved Issue', *Film History*, 18 (2006), 306-18.

It is likely that the more imitative way of intervening on films with respect to art restoration may depend on the assumption that 'the material contributes to the image but is not an integral and irreplaceable part of it, as would be the case of a painting or sculpture.'[150] Interestingly, Annamaria Giusti's definition of mosaic restoration can be easily adapted to film restoration: 'In filling the lacunae in a mosaic, the unrepeatable role of the creative artist is not usurped, but rather the craftsman's [restorers] task of translating the design [matrix, whatever it be] into practice [printing] is undertaken.'[151]

[150] Annamaria Giusti, 'Filling Lacunae in Florentine Mosaic and Tessera Mosaic: Reflections and Proposals', in *Restoration: Is It Acceptable?* ed. by Oddy, pp. 145-8 (p. 146).
[151] Ibid.

4 Film restoration as a practical hermeneutics: the productive activity of understanding and showing

4.1 A restored film from a semiotic point of view

'Various Multiplex Multiformis'
Marguerite Yourcenar[1]

The first chapter of this thesis discussed the definition of what kind of object a 'film to be restored' is, and the second attempted to shed light on the practice of film restoration both from a narrative and figurative point of view, by dealing with four case studies of restorations of Italian silent films. The description and analysis of the stages of restoration in these case studies (identification and reflection on the nature of the film to be restored; decision-making processes of film restorers and final results) has helped to clarify through practice the difference between preservation – i.e. the production of intermediate material (e.g. internegative, dupe positive) to conserve the extant films – and the restoration process proper. Having subsequently reviewed the theory and practice of restoration in other visual arts to draw a few parallels with film restoration, it seems important at this point to ask what kind of object a *restored* film is. That is, what kind of object is one left with *after* the restoration process?

One undeniable premise is that a film restoration process – regardless of the technology in use – ultimately produces, if nothing else, a copy. Of course, a restored film is much more than a copy, but this is, nevertheless, the first and minimal result of

[1] Marguerite Yourcenar, *Memoirs of Hadrian*, trans. by Grace Frick (New York: Farrar, Straus and Giroux, 1990), p. 27.

the process itself, leaving aside all consideration of the merit and final results of the restoration choices. Thus, to begin to understand the nature of a restored film, it is necessary to ask what a copy is. One framework which seems particularly useful in this context is Umberto Eco's work on the semiotic status of copies: his effort to produce a taxonomy which tries to define doubles and copies in a systematic way will provide a starting point for a reflection on the nature of the special kind of copy this thesis deals with – a restored film.

However, the very existence of a copy implies a preliminary problem. A copy, in fact, always presupposes the possibility of somebody mistaking one object for another, which, in turn, makes it possible to produce mystifications. In other words, a copy may be taken to be the original by someone who does not possess the necessary information to distinguish it from the original; or, a copy may be intentionally presented as an original by someone.

In order to attempt a definition of *restored copy*, a number of concepts in Eco's reflections can be usefully applied to the issue at hand. Semiotics and cinema have often been paired in a fruitful combination, but, while semiotics has been widely applied to film theory (Gilles Deleuze, Christian Metz, Peter Wollen), it has hardly ever been used to help define the restored film.[2] In the *Limits of Interpretation,* Eco constructs a taxonomy of 'replicas', or *tokens*, whose common features make it possible to mistake one object for another. Eco draws on Peirce's terms – 'type' and 'token' – where token is a specimen or occurrence of a type: an example in the case of a film would be different prints (tokens) of the same negative (type). In a sense, in the field of film restoration restorers intervene on tokens, that is, on prints, which – in some respects – can be taken interchangeably one for another. Perhaps, then, it is possible to identify the semiotic features of a restored film through a comparison with Eco's categories.

[2] One exception is Michele Canosa, 'Immagine e materia', p. 29.

Eco defines a 'double' as 'a physical token which possesses all the characteristics of another physical token, at least from a practical point of view, insofar as both possess all the essential attributes prescribed by an abstract type.'[3] Thus, doubles are not indiscernible, but they are interchangeable by virtue of their shape and physical characteristics.

At this point, it may be useful to repeat briefly the main characteristics of a silent film as a physical object: both negative and positive are printed on a nitrate transparent film base (celluloid), the emulsion is orthochromatic (at least until the 1920s), which means sensitive to only blue and green light, the aspect ratio is 'generally about 1:1.28 to 1.31',[4] colours are applied only on the positive film stock during or after printing procedures through tinting, toning, stencil or a mixture among them, whereas the negative is in black and white. Hence, each positive print may have different characteristics from another struck from the same negative: this reinforces the premise that a silent copy is a unique object. The fact that one of the peculiar characteristics of film is that it is reproducible by definition does not imply that all the copies should be identical, as, in fact, they are not, in the case of silent films.

Bearing these characteristics in mind, it appears clear that it is not appropriate to define a 'restored film' as a double of an original nitrate print (if 'restored' is taken to mean the final print on a safety film stock shown to an audience). In effect, a number of features that a restorer/interpreter might consider essential – e.g. shape and ratio of the image, physical characteristics such as the transparency of nitrate compared to triacetate and polyester film bases, tinted/toned or stencilled colours – are completely different. Thus, it is reasonable to consider two nitrate prints as a good approximation of a double

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[3] Umberto Eco, *The Limits of Interpretation*, (Bloomington: Indiana University Press, 1976), p. 177.
[4] Cherchi Usai, *Silent Cinema*, p. 129. Actually, elsewhere Cherchi Usai states that the aspect ratio of a silent film was between 1: 1.31 and 1:1.38. See Paolo Cherchi Usai, 'The Early Years: Origins and Survival', in *The Oxford History of World Cinema*, ed. by Geoffrey Nowell-Smith (Oxford: Oxford University Press, 1996), pp. 6-13 (p. 9).

when they derive from the same negative of the same age. A modern safety print struck from an original nitrate negative or positive print, on the other hand, will be a physical token with different characteristics, thus, certainly not a double.

Cinemagoers viewing films with a wish to be entertained may consider a 'restored film' as a double of the 'original', because they have a more flexible approach to the issue. From this point of view, even a copy of *Cabiria* on DVD or VHS could be (mistakenly, from a more theoretical standpoint) regarded as 'the restored original'. In addition, even the original copies of a film, with which a restorer might have to deal, can be different in some features that the restorer/interpreter might deem important (e.g. format, perforations, colours).

In the case of two hypothetically identical original nitrate prints (e.g. two copies of *Cabiria* from the 1920s), the restorer might assign a particular value to one, identifying particular features that distinguish it from the other: for instance, the name of the film stock producing company 'Agfa' printed on the edges of the film, in which the letter 'A' was printed in thinner type than before 1923, and with pointed tops instead of flat tops. These particulars can help identify the other copy as older (the interpreter can identify a temporal priority among different copies).

With reference to Eco's definitions, such cases might be regarded as *pseudo doubles*, namely tokens of a type that acquire a particular value for some users. For instance, this value can also derive from a copy that the authors deposited as a legal copy, even though a distinction must be made among different countries. In fact, in Italy these legal copies are of no great quality, because, especially in the past, producers have often deposited discarded test prints in CN-Rome, so as to fulfil legal requirements while holding on to the better quality prints with the highest commercial value. In the USA, on the other hand, the so-called paper prints, deposited at the Washington Library in the early history of cinema, have aroused interest because of the disappearance of the

correspondent original nitrate prints (again, in Eco's terms, such a situation would be considered a case of 'legal priority').

It would seem that an author's signature or any other marks made by the author on the work might be considered of greater importance, as long as evidence of authorship is available. In *Cabiria*, for example, Pastrone's initials – the G at the beginning and the P at the end of every shot in the 1931 version – are incontrovertible evidence that Pastrone himself approved the editing (as Eco might put it, an 'evident association'). If another print existed dating from 1931 but not signed by Pastrone, its value would be lower than the autographed copy. Yet, if scholars found another non-signed copy in Pastrone's home, this print of *Cabiria* would acquire value based on an 'alleged association'.[5]

Eco defines all these categories as *pseudo doubles*, including also pseudo association, which signals a double that works as a pseudo double (e.g. a pirated copy where the trademark is also copied). According to Eco, it is only when a 'Claimant' falsely identifies a token with an irreproducible object or with a pseudo double that 'forgeries become semiotically, aesthetically, philosophically, and socially relevant'.[6] Surely, to define a 'restored' film as a work of forgery would be going too far, but Eco's initial definition of forgery is nevertheless tempting to apply to a restored film, since, in his words, forgery is 'any object which is produced – or, once produced, used or displayed – with the intention of making someone believe that it is indiscernibly identical to another unique object.' Eco further specifies that: 'however, the question whether B, the author of Ob, was guilty of *dolus malus* is irrelevant […]. B knows that Ob is not identical with Oa, and he or she may have produced it with no intention to deceive'[7]. Upon close reflection, in any case, it appears clear that the 'restored' film can

[5] Eco, *The Limits of Interpretation*, p. 179.
[6] Ibid., p. 180.
[7] Ibid.

in no way be called a *downright forgery* following Eco's definition, since such a forgery implies that the original exists somewhere and that the forged object is the only original object, a claim that no film restorer would make.

There is, however, a certain similarity between the case of films and downright forgery as defined by Eco: the 'Claimant' (in this case the restorer) knows and appreciates the existence and the value of the 'original' film, while the 'Addressee' (that is, the audience), shares this knowledge to some extent, but may not appreciate the distance between the original and the restored object in most cases. A restored film might therefore be passed off as more similar or closer to the original for advertising and commercial purposes, regardless of whether the audience is able to make, in Eco's terms, a correct identification. Such a situation surely bears at least some similarity to what Eco calls *dolus malus*.[8]

In addition, Eco goes so far as to include in the *downright* forgery category even any 'unique and original' work of art copied by its author (authorial copy) as well as alterations of originals.[9] The first might be the case, for instance, of the film *Rescued by Rover*, whose director remade the same film with the same title in two subsequent versions, attracting an increasing number of cinemagoers by showing what were effectively three different films as if they were the same.[10] In the field of modern art, Damien Hirst's restoration of his own artwork *The Physical Impossibility of Death in the Mind of Someone Living* is an interesting case of *auto-restoration*. The original work of art consists of a shark preserved in formaldehyde in a glass cabinet.[11] In 2004, thirteen years after the first exhibition, the shark exhibited the first signs of decomposition. Hirst decided literally to substitute the original shark with a new

[8] Ibid.
[9] Eco cites the case of De Chirico who replicated some of his own paintings after the Second World War. See Ibid., p. 182.
[10] See 1.3 in this work.
[11] See Paolo Casicci, 'Se l'arte è un pesce che va a male il genio lo restaura in officina', *Il Venerdì di Repubblica*, 22 December 2006, pp. 106-11.

specimen. (Fig. 4.1)

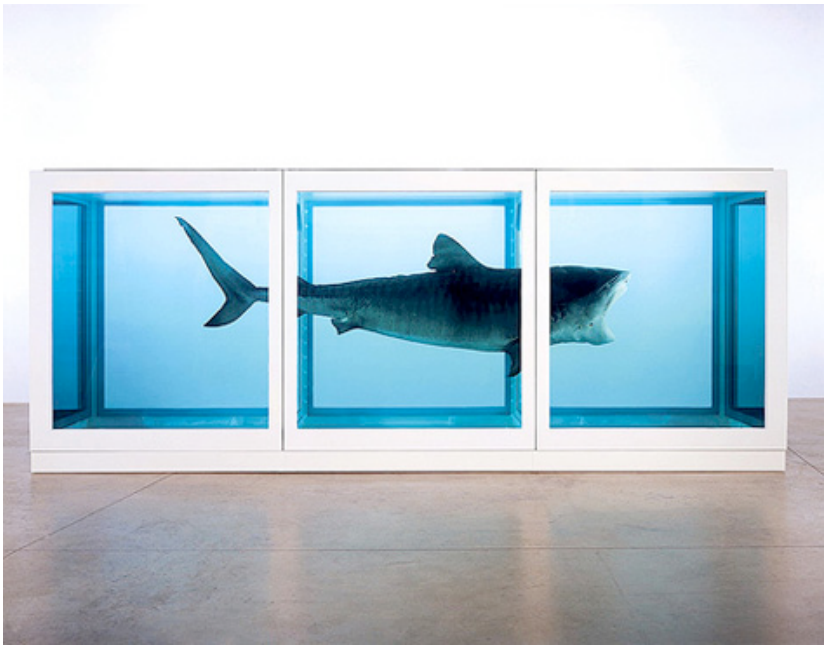

Fig. 4.1 Damien Hirst, *The Physical Impossibility of Death in the Mind of Someone Living* (1992)[12]

It seems that, in this case, it is the very idea of 'forgery' (in Eco's sense) that is incarnated in a work of art: what is crucial for the artist is his intention, his idea, so he substitutes the original shark with a new one, which becomes to the audience the 'real thing', to all intents and purposes. On the other hand, conservators generally focus their intervention mostly on the conservation of the original material of a work of art. Broadly speaking, artists consider their work mostly from an aesthetical point of view, while conservators consider it from an historical point of view as well. In Brandi's theoretical frame one of the most important tenets is that restorers are not allowed to insert themselves in the time of the creative work, substituting their work for the artist's. What is debatable is whether the artist should follow the same principle, avoiding the practice of re-presenting old work after a period of time and after having manipulated it.

In fact, there is another approach to conservation work that tends to attach less importance to the material with which the work of art is made, and which may be closer

[12] Source: <http://www.corrupt.org/tag/art> [accessed 30 August 2010].

to the practice of film restoration (namely, a form of duplicative simulation). For instance, Heinz Althöfer, an art critic and the director of the *Restaurierungzentrum* in Düsseldorf until 1992, has suggested that a work of art by Martial Raysse, *Soudain d'été dernier* (1976), consisting of a straw hat, be replaced with a copy, since the original is in decay. Such an intervention is based on an effort to reconsider the importance of the link between material and expression in contemporary works of art. Another similar instance is the restoration of Louis Kahn's Yale Art Gallery in New Haven (USA), built in 1951-53: restorers substituted the original façade with glass and steel panels, namely an ersatz similar to the original, but different in material.[13]

Among *downright forgeries* Eco also lists alterations of originals. This case occurs when someone deliberately alters a work of art maintaining that it is the original. Surprisingly, Eco refers here also to works of restoration through which restorers try to reconstruct the artist's intention (*intentio auctoris*). A number of examples are provided in the chapter on lacuna in the present work (one stands out among others: Montorsoli's and Cornacchini's works on the group of the *Laocoon*).

Actually, there is a different approach in the conservation of 'traditional' works of art and the restoration of films. An archaeological/conservative approach prevails in the field of painting, sculpture and architecture restoration, whereas a more aesthetic/functional approach tends to be taken in film restoration. It is still possible to enjoy a mutilated statue like the *Victory of Samothrace*, while it is more difficult to appreciate an incomplete film. (Fig. 4.2)

[13] Both these cases are reported in Simona Salvo, 'Il restauro dell'architettura contemporanea come tema emergente', in *Trattato di restauro architettonico: grandi temi di restauro*, ed. by Giovanni Carbonara, 3 vols (Turin: UTET, 2007), I, pp. 315-35 (p. 316 and p. 319).

Fig. 4.2 The *Victory of Samothrace* (II century BCE. Musée du Louvre, Paris)

Another case may be described as something between the alteration of the original (see the case of Bronzino in 3.1) and the authorial copy: one example is the work of D.W. Griffith, who altered the editing of his films, even when they had already been distributed and were in projection cabinets. In this case, the author alters the 'original', which can be used to produce an authorial copy (even though the original editing will be lost).

Eco also classifies a second kind of forgery: *moderate forgery*, in which the 'Claimant' claims not the identity, but the interchangeability of the tokens with respect to an original that exists or existed in the past. In the field of film restoration, restorers present a 'restored' film as if it were the 'original', since a film is ontologically made to be reproduced in many copies. Thus, it is not really important to assert that the restored film, the projected print, is one of the prints projected at the time of the film's production – that would be almost impossible, if only for mechanical (e.g. shrinkage of the original films) and legal reasons (projecting nitrate film base is generally forbidden

today because of its inflammability) – given that 'for both the Claimant and the addressees the lines between identity and interchangeability are very flexible'[14]. Eco actually considers the flexibility of such boundaries as the product of 'confusional enthusiasm', and offers as an example the case of the ancient Romans, who were aesthetically satisfied with copies of Greek statues or, nowadays, 'some tourists [admiring] the copy of Michelangelo's *David* without being bothered by the fact that it is not the original.'[15]

Ultimately, what is crucial here and also in the restoration of films, is the pact of understanding between the restorer and the audiences: the request, in fact, may be different according to different types of cinemagoers. Scholars or film festival frequenters, as well as members of a broadly defined educated viewing public, might demand a work as close as possible to the *Ur-copy*, a text 'as if it were the original'– where 'original' stands for one of the prints shown at the time of the first release and corresponding to the author's intentions. This kind of audience will however know that what they are seeing is as close an approximation as possible, but never 'the original'. It is likely, on the other hand, that most other spectators will believe that what they are watching is the film exactly as it was at the time of the first showing. Obviously it is not, but from a postmodern point of view, the audience's belief is reasonable.[16] Indeed, spectators can watch a film that has the same title as *the supposed original* silent film, even though they are not aware of the restorers' work of reconstruction, often based on hypothesis, nor of the actual environmental and technical conditions in which the original audience watched the film. On the other hand, in presenting their work,

[14] Eco, *The Limits of Interpretation*, p. 185.
[15] Ibid.
[16] About the socio-cultural scenario of an era in which the very idea of true/false is in crisis, see Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. by Geoff Bennington and Brian Massumi (Manchester: Manchester University Press, 1984) 1st ed. in French 1979; about the concept of mass reproduction and reproducibility see Jean Baudrillard*, Simulacra and Simulation*, trans. by Sheila Faria Glaser (Ann Arbor: The University of Michigan Press, 1994) 1st edn in French, 1981.

restorers tend to reinforce the idea that the appearance of the film adheres exactly to the 'original' through additional information such as the film length (e.g. the titles in the restored copy of *Cabiria*), even though there are differences between the original and the restored copy. What becomes an issue is the degree of authenticity: how much the restored film resembles, *looks like* the 'original'. Film restorers tend to minimize the gap between the present and the past, fulfilling the 'victory of preservationism' within 'restorationism'.[17]

Another kind of audience, used to the mainstream entertainment industry, may be fascinated by a popular cultural phenomenon: it is here that a 'market for cultural memory' begins to exploit such a demand, 'developing consumer appreciation for restored product'[18]. The restored product in question must therefore become as glossy and 'perfect' as possible. It is important to consider that, since the concept of 'original' is uncertain for films, the 'restored' film will acquire characteristics that will contribute to make it not simply a copy, as in the case of the Michelangelo's *David*, where the copy resembles the original statue, nor a 'replica' or a 'facsimile' – in Canosa's words – but rather a sort of 'new original', a picture, a sign of the relation between the time in which the film was produced and the time in which the film was restored. As a matter of fact, when a 'restored film' comes into existence, it becomes a point of reference with which restorers, conservators, curators and historians will have to deal from that time onwards.

A case in point might be Giorgio Moroder's 1984 'postmodern interpretation' – in Enno Patalas's words – of *Metropolis*, which was made as a deliberate pastiche rather than as a conservationist's text. The recently restored version, on the other hand, integrates footage from the 16 mm print found in Buenos Aires in 2008. It was screened

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[17] Philip Rosen, *Change Mummified: Cinema, Historicity, Theory* (Minneapolis: University of Minnesota Press, 2001), p. 64.
[18] Nathan Carroll, p. 21.

with the original score by Gottfried Huppertz in Germany on the occasion of the 60th Berlin International Film Festival (February 2010), and at Cinema Ritrovato (Bologna, July 2010), and hailed in the media as a breakthrough.[19] From the conservationist's point of view, the Moroder version cannot be considered a work of restoration proper (as I have stated in 1.3). It is true, however, that it has acquired cult status, and Thomas Elsaesser defends Moroder's work as 'a selective appropriation […] responsible for lending new life to the vision of Lang and von Harbou'[20].

The most interesting outcome of the recent restoration on *Metropolis* is its effort to fill in the narrative lacuna, which has clarified some parts of the plot which had famously remained obscure and has made possible new research on the film. For instance, it has enabled a closer textual comparison with Thea von Harbou's novel, which she wrote parallel to producing the script of the film with Lang.[21] The filling of the narrative lacuna involved, however, the creation of a figurative patchwork, since the material from Argentina that was used to fill the missing sections (about 25 minutes) was 16 mm film, which had to be enlarged to adapt it to the 35 mm original standard, and this was visibly different from the parts that were originally in 35 mm. Paolo Cherchi Usai reports similar cases which occurred, for instance, in the 1989 restoration of *Intolerance* and in his research for the original 1914 edition of *Cabiria*.[22] In these cases it appears clearer that the result of a work of restoration of a narrative lacuna is a patchwork that will present a 'restorers' cut'. The paradox is that the restorers' effort to seamlessly link narrative parts in order to make the film as 'viewable' as possible is also what ultimately conceals their hand, often making it impossible to recognize different

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[19] Enno Patalas, 'The City of the Future – A Film of Ruins: On the Work of Munich Film Museum', in *Fritz Lang's Metropolis: Cinematic Visions of Technology and Fear*, ed. by Michael Minden and Holger Bachmann (Rochester, NY: Camden house, 2000), pp. 111-22; about the rediscovery of an almost complete version of *Metropolis* in Argentina see Naundorf, pp. 26-9.
[20] Thomas Elsaesser, *Metropolis* (London: British Film Institute, 2000; repr. 2008), p. 58.
[21] See Giorgio de Vincenti's 'Introduction' to Thea von Harbou, *Metropolis*, trans. by Riccarda Novello (Pordenone: Edizioni Studio Tesi, 1993), novel first published in 1936.
[22] Cerchi Usai, *Silent Film*, p. 158; Cerchi Usai, '*Cabiria*, an Incomplete Masterpiece', p. 160.

sources. This would seem to pose a crux of sorts: it is natural to aim for a product that is as enjoyable as possible to the view, but on the other hand, recognizability, the tenet that preserves historical accuracy in restoration, will be lost to a certain extent. At this point the question that arises is: what kind of object – from a semiotic point of view – is a restored film like this? In a first attempt to answer, and before drawing again on Eco's taxonomy of copies, a number of further reflections and comparisons will help in semiotically labelling a restored film.

Perhaps both the ubiquity of different prints of the same film shown in different cinemas at the same time and the title maintained as the 'original' have contributed to create confusion.[23] In order to clarify, I propose that it may be useful to compare a restored film with some so-called 'outdoor museums' or 'living history museums'. Philip Rosen investigates the differences among three of them: Old Sturbridge Village in Massachusetts, Greenfield Village in Michigan and Colonial Williamsburg in Virginia.[24] Under the patronage of three founders and major investors, respectively Albert Wells, Henry Ford and John D. Rockefeller Jr, each museum village represents a different approach to the past, highlighting different ways of preserving or restoring history, in brief different '[forms] in resurrecting the past'.[25]

The first is a pastiche of authentic buildings 'moved from their original sites, repaired, and re-erected at Old Sturbridge Village […]. [It] is itself an assemblage of buildings from various locations rather than an integrally preserved site'.[26] In fact, there are also newly built parts of buildings, which are not authentic. Moreover, the village features people impersonating original nineteenth century inhabitants, who explain their roles and certain elements of the exhibition; it also exhibits a particular breed of sheep,

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[23] See Paul Valéry, *Conquête de l'ubiquité* (Paris: Gallimard, 1928), Available at: <http://classiques.uqac.ca/classiques/Valery_paul/conquete_ubiguite/conquete_ubiquite.html > [accessed 20 July 2009].
[24] Rosen, pp. 58-78.
[25] Ibid., p. 60.
[26] Ibid., pp. 59-60.

called Wiltshire-Dorset, now extinct, which curators of Old Sturbridge Village have replaced with sheep that resemble the original animals. This choice points to what Rosen defines as 'a replica', 'a substitute with an appearance of the original, and in brief, an obsession for preservationism.'

In the second museum, Greenfield Village, buildings, tools, objects are authentic, but they come from different ages and localities, hence the village is 'a jumble of times and places […], a mélange without definite temporal or spatial shape'[27].

The last museum, Colonial Williamsburg, preserves a town in a determined span of its life (1790s), with original buildings dating back to the end of the eighteenth century, in an area where all the other historical, but more recent edifices, were demolished. However, in this village as well, as Chris Caple suggests, 'the difference between the real eighteenth-century buildings or objects and the replicas is not emphasized to the visitor'[28].

Colonial Williamsburg reminds one of de Oliveira's restoration of the silent version of *Cabiria* (1914), in which scenes that Pastrone shot for the sound version (1931) were expunged from Pastrone's personal print. In Colonial Williamsburg the selective elimination of buildings dating after 1800 also recalls Giovannoni's 'diradamento edilizio' ('thinning-out' of urban fabric).[29] The comparison arises from the fact that Pastrone used most of the previous version in order to make a sound version of *Cabiria*. Therefore, in the attempt to reconstruct the 1914 version, de Oliveira eliminated those shots he argued had been produced only for the 1931 sound version.

Comparing these examples of preservation-restoration, a restored film usually seems to be closer to the case of Old Sturbridge Village, even though it may embrace

[27] Rosen, pp. 62-3.
[28] Caple, p. 68.
[29] See 3.2 on lacuna.

the other two: the aim of film restorers is not to present 'the original' film, but a 'replica', which never existed in the past, arising from the comparison and copying of different authentic copies. In addition, some elements might be reconstructed through techniques different from the original, such as the use of modern internegative colour stock to reproduce stencilled original colours on the orthochromatic film stock, which may be likened, for instance, to the costumes of the actors in Old Sturbridge Village. Elements may even be substituted, such as data interpolated using digital software, like the sheep breed. The material from which restorers produce the *new*, restored film, is authentic, as in the case of Greenfield Village, but the result will be a mix.

Perhaps, one of the most significant aspects of film restoration is that often the sources used to reconstruct a film are not evidently distinguishable in the restored film. This is true also in Colonial Williamsburg, where – in Caple's words – 'the difference between the real eighteenth-century buildings or objects and the replicas is not emphasized to the visitor.'[30]

What is crucial is that the restored copy (as in the case of Old Sturbridge Village) imitates the originating material (original negative, first print, and so forth) using it (as in Greenfield Village), or selecting it (as in Colonial Williamsburg), '[…highlighting] the resort to resemblance rather than sameness, iconicity rather than indexicality'[31]. In other words it is a substitute with an appearance of the original: that is exactly what happens in film restoration.

[30] Caple, p. 68.
[31] Rosen, p. 65.

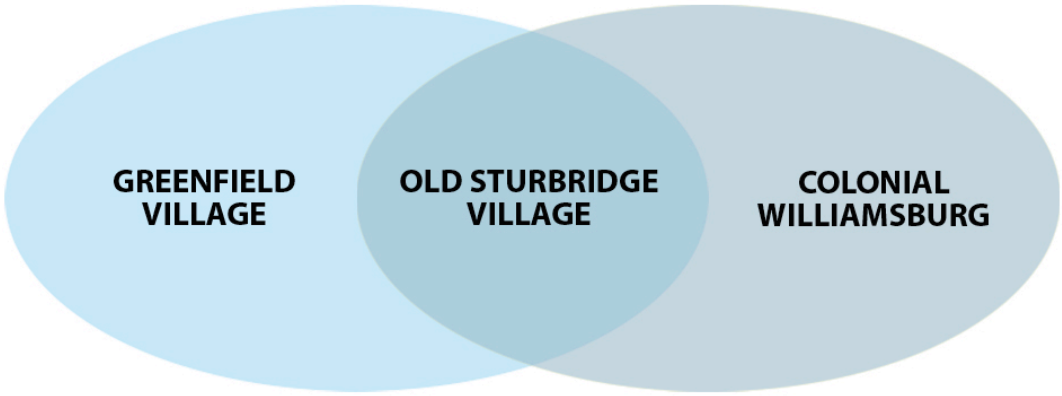

Fig. 4.3 This visualization shows the overlap of the characteristics of three museum villages: Old Sturbridge appears as a compromise between Greenfield (a 'disunified collection of preserved historical elements' or an incomplete totality) and Colonial Williamsburg (a 'replication of a hypothetical original' or a reconstitution of a whole): a substitute with an appearance of the original[32]

In Old Sturbridge Village, signs of deterioration (e.g. students' graffiti on the schoolhouse walls) are an index of the passage of time, thus they have to be preserved, whereas in the case of Damien Hirst's restoration such signs must be eliminated in order to produce an icon of the original.

It would seem that the place of film restoration is a middle ground between these attitudes: on the one hand, the preservation of defects of the original productions (scratches coming from the original negatives, the surface noise of the soundtrack) is increasingly acknowledged in the practice, as the case of the 2006 restoration of *Cabiria* demonstrates. On the other hand, the print projected as the *restored film* is not simply a copy that implies the existence of the original, but a new original.

To return to Eco's taxonomy, it may be observed that he lists a third kind of forgery that may help define a restored film from a semiotic point of view: *forgery ex-nihilo*. The assumption here is that the original 'does not exist or […] it existed in the past, [but] it is by now irremediably lost.'[33] This definition partially suits the work of those who, like Viollet-le-Duc, have tried to restore *à la manière de*, attempting to

[32] The visualization has been reconstructed on the basis of the information in Rosen, p. 63, and Caple, pp. 67-8.
[33] Eco, p. 186.

reproduce the style of original artists or even of past ages (e.g. the Gothic style).[34] In film restoration a similar case may be the restoration of a film on the basis of extra-filmic documents, with the aim of creating a work that could have existed in the past, but did not actually exist in such a form. As I discussed in Chapter 1, this was the case with the restoration of *Touch of Evil* (Orson Welles, 1958), where the restorers based their work on a hypothetical reconstruction arising from Welles' correspondence with the production company. Another example might be the case of a reconstruction of colours in a silent film, hypothetically recreated through sets of colours taken from other films made by the same director or in the same period. Similarly, restorers may intervene in grading a film, reproducing the style of a particular cinematographer or director, when working on copies printed in the past without authorial references. An extreme instance is what happened in the case of *Eyes Wide Shut* (1999), when the sudden death of the director, Stanley Kubrick, forced his collaborators to complete the film editing according to his style and hypothetical wishes. Even though one cannot really consider this example a restoration, it is reminiscent of what Cherchi Usai calls the 'obsession for completeness' of a work of art. In this case, however, the obsession derived not from scholarly appreciation but from the need to produce a marketable film.[35]

However, all these cases cannot really be considered forgeries, assuming that restorers do not intend to deceive the audience. Conversely, a forgery might arise if someone claimed that a remake was the original film and tried to sell it as such. Concerning this point, Jerrold Levinson uses Nelson Goodman's categories of autographic and allographic arts: the first are those arts in which the most precise duplication is not considered genuine with respect to the original (e.g. paintings), whereas the latter are those in which all the copies are equally authentic (e.g. literature

[34] See 3.3 in this work.
[35] Cerchi Usai, p. 65.

or music). Levinson draws a further distinction between *inventive* and *reproductive forgery*: the former is appropriate to define a forgery of an allographic work of art falsely attributed to an author (e.g. a piece of music or a poem), the latter to define an autographic work of art (e.g. a painting).[36] Plainly, in the case of silent film restoration the question at issue is different: to what extent is the audience aware that the restored film shown today is an approximation and not exactly what people watched decades ago?

In order to answer this question, it may be useful to think a bit more about Nelson Goodman's distinction between autographic and non-autographic (or allographic) arts.[37] If someone makes a copy of Leonardo's *Mona Lisa*, it will not have a comparable value to the original, while if someone copies a score by Beethoven or a poem by Shakespeare, these will still be considered works by their legitimate authors. In addition, Goodman draws a distinction between 'one-stage' and 'two-stage' arts. Literature (poetry and novels) is a one-stage art, because after the first stage (writing), readers may enjoy the work without waiting for any other stage. Instead, music is a two-stage art because the writing of the score is only the first stage, and the audience may fully enjoy music only when musicians perform it (the second stage). However, it is perhaps worth thinking about single *works* as being allographic or autographic, rather than the concept of particular arts.

Following Goodman's train of thought, it might be possible to assimilate cinema to the art of printing or etching. Goodman classifies the latter as autographic art because every single print is slightly different from the others, so that all of them can be considered originals. The evidence is that artists usually number every single copy, marking the fact that the copies are autonomous entities in some way, even though they

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[36] Jerrold Levinson, 'Authographic and Allographic Art Revisited', *Philosophical Studies*, 38 (1980), 367-83.

[37] Nelson Goodman, *Languages of Art: an Approach to a Theory of Symbols*, 2nd edn (Indianapolis: Hackett Publishing, 1976), p. 113-5.

come from the same matrix. The matrix is then normally destroyed so that it cannot be used again. Through this practice, artists effectively produce a number of original works, whose progressive numbers and authorial signs provide an aura of authenticity.

If the reproducibility of cinema would seem at a first glance to assimilate it to an allographic art, the fact that every single copy will bear some differences brings it closer to the category of autographic art, as in the case of etchings. Silent cinema in particular is all the more similar to this autographic condition, since copies diverge to a greater degree, and different versions of the same film may even exist: indeed, despite the fact that a film is reproducible through a matrix in a number of copies (limited before the production of a film stock good enough to duplicate negative film stock), and that it must be performed through projection (allographic features), silent films often approach the condition of a 'unique' object, moving along the spectrum towards an autographic condition. Taking into account all the characteristics of the production and projection of silent films, silent cinema might be considered a middle way between an autographic and an allographic art.

In addition, unlike music – in which it is possible to distinguish the two stages of the production of the score and the musicians' performance – silent cinema presents five stages: the writing of a script, the shooting and the consequent production of a matrix (exposed negative), postproduction (colourization, production of intertitles, editing), the printing of a positive, and the projection of the film, which was a particular kind of show involving various types of performance. The latter could include, according to the circumstances of the individual projection, music, sound effects and voiceover, which assimilated this art to a theatrical or musical performance. This might reinforce the idea of a restoration that involves the reconstruction of the environment and the material conditions (e.g. the cinema hall itself, the hand-crank projection, the coloured filters) in which the projection took place. But while it is true that restorers need to take into

account the historical context in which the show took place, an attempt to reverse the course of time, to resurrect the past, would resemble the activity of the living history museums which re-enact events for tourists wishing to experience a sort of time-machine. The performance aspects would become predominant with respect to the historical, documentary value of the film. Moreover, an attempt to reconstruct the exact conditions of performance of the past might yield a 'fake'-looking result, one which does not take into account the fact that viewing modalities and ways of experiencing films have changed and which leaps from the past to the present without attempting a mediation.

In the attempt to define silent cinema as an autographic or as an allographic art, another element should be taken into account: the time in which a film was made. In fact, the older the production is, the more autographic the film seems to be. This can be true both for technical and historical reasons. On the technical side, one may think of the fact that duplicating negatives became possible only in the second half of the 1920s; consequently, shooting was done by means of two or more cameras, or the same frame was shot multiple times, in order to have several negatives available. The films produced were therefore slightly different from one another. A further difference could be created by producing alternative editing (especially endings) to be marketed to various countries, though the films went by the same title. In addition, the positive prints were coloured separately, so that each could be quite different from the others, even though the same technique was used. Also, at times within the same batch of copies, only some were coloured through expensive techniques such as stencil, while others might be coloured inexpensively, or even simply left black and white.

The historical reasons for considering older films as more autographic include the fact that the original negative and the first 'copies', namely prints, might have been lost, leaving only one print, or multiple different prints. One case in point is *The Last*

Days of Pompei, in which the first reel is coloured by stencil in the British print, whereas it is tinted in the Italian print. Thus, if it is possible to consider a contemporary film as a form of allographic art, since all the copies are reasonably similar one to another due to modern industrial means of serial production, a silent film – born in theory as an allographic work of art – has progressively come to resemble an autographic work of art, much more similar to a *unicum*.

It is now time to return to the issue of defining a restored film from a semiotic point of view, drawing on Charles Sanders Peirce's insights as well as Eco's critical framework. In his well-known typology based on the triad of icon, index and symbol, Peirce focuses on the different relations of signs to their objects.[38] An icon is a sign that embodies certain qualities of the object, to which it is linked through the category of likeness (e.g. a portrait); an index is a sign linked to its object by an actual connection or 'real' relation (e.g. smoke as an index of fire); a symbol is a sign that implies the intervention of an interpreter since it denotes an object only by convention and through a process of abstraction (e.g. a red traffic light means stop).

Eco takes issue with Pierce's definition of the relation between iconic sign and denoted object (the real object) as a relation of similarity, namely a simple resemblance.[39] Eco further specifies the issue by distinguishing similarity from likeness, claiming that it is not possible to clarify the connection between iconic sign (*representamen*) and denoted object (*denotatum*) simply by invoking similarity. Similarity, in fact, seems to be a generic category, since it does not define the specific aspects which make an iconic relation possible.

This issue may suggest some reflections on film restoration. Following Peirce's categories, a restored silent film would seem to stand in an iconic relation with the

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[38] For an early definition (1885) of the three kinds of sign see *The Essential Peirce: Selected Philosophical Writings, Volume I (1867-1893)*, ed. by Nathan Houser and Christian Kloesel (Bloomington, IN: Indiana University Press, 1992), pp. 225-7.

[39] Umberto Eco, *A Theory of Semiotics* (Bloomington: Indiana University Press, 1976), p. 195.

original, when it presents a number of properties in common with the 'original' film, but has been in various ways 'filled in' or made 'whole' through conjecture. It might also be possible to consider a restored film as an index, because there is a physical link between the 'original' and the 'restored' film, which indicates the existence of the former. A symbolic relation, finally, might be activated in the relation between the film and the knowledgeable spectator who decodes the restored film as related to, but not necessarily the same as, the original. At any rate, regardless of the apparent overlapping of categories, a restored film seems to be preeminently in an iconic relation with its original reference, since it is first of all a form of *interpreting-copy* that critically embraces many characteristics of the original.

In this form of analytical replication – film restoration – it is clear that on the one hand restorers need to set pertinent recognizable elements (e.g. image contrast, colours), which are of paramount importance in linking the original material (comparable to a type) to the restored film (comparable to a token), in order to move beyond the simple criterion of similarity. On the other hand, restorers should clearly indicate what they consider to be not pertinent, in setting an iconic relation between 'original' and 'restored' film, which means providing a form of interpretation, a selection of pertinent properties.

This seems to be particularly true in the post-modern era, in which digital technologies provide extraordinary possibilities to create images as if they were real. In addition, it must be taken into account that it is very likely that 'much of the unstable ephemera of the twentieth century will be known through record rather than actual objects'[40]. This is already true if one keeps in mind that availability of old films, not only early films, occurs for most people through new media (e.g. DVD). Moreover, Melucco Vaccaro has noted that, while in the ancient world a copy of a work of art was

[40] Caple, p. 114.

produced with an aim to trading or emulating, nowadays copies may have the task of protecting the originals from environmental conditions and from processes of decay (i.e. a preservation aim).[41]

Thus, as I claimed in the previous chapter in the discussion of lacuna (3.2), film restorers seem to be increasingly basing their work on the acceptance of the tenet that 'material contributes to the image but it is not an integral and irreplaceable part of it'.[42] This could lead to two consequences at least: restorers might indulge in restoration as a form of partial enhancement of the original, and a sensible audience might no longer give credence to what is shown as 'original'.

In conclusion, a restored silent film might be defined as a *moderate forgery*, that is, a replica to which restorers (to some extent) and especially cinemagoers tend to assign a property of interchangeability with the 'original', similarly to what happens in living history museums. The confusion is made possible by the very fact that, beginning with the possibility of duplicating negatives after 1926 and then the production of sound films in the 1930s, film production became increasingly standardized and prints became almost indistinguishable one from another, so that one might reasonably consider them as perfect doubles. The consequence is that, from that time onward, films seem to fall increasingly within the field of allographic arts. The materials of these more recent films may be treated as theoretically interchangeable, not an integral and irreplaceable part of the film itself, as in the case of silent films.

Silent films, coloured through old techniques different from the ones now used, come, in other words, into a different category from later films. Mazzanti argues that in film restoration, which 'largely consists in *duplicating* the original material', a

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[41] Alessandra Melucco Vaccaro, *Archeologia e restauro: storia e metodologia del problema*, 2 edn (Rome: Viella, 2000), p. 214.

[42] Annamaria Giusti, 'Filling Lacunae in Florentine Mosaic and Tessera Mosaic: Reflections and Proposals', in *Restoration: Is It Acceptable?* ed. by Andrew Oddy (London: The British Museum, 1994), pp. 145-8 (p. 146).

transparent duplication is an illusion because it introduces distortions.[43] If we take, for instance, the case of a stencilled shot, literally a painting applied on *a specific* print, this kind of film is unique. The attempt to reproduce/restore it arises from the need to *watch* silent films, which would be impossible otherwise, given that it is impossible to project them both for technical and legal reasons.[44] In any case, the audience should be aware that the silent film projected is only an approximation to what people enjoyed when the film was released, and restorers should take responsibility for communicating this.

[43] Mazzanti, p. 24.
[44] Moreover, it seems that new colours obtained through a duplication of originals onto modern internegatives are destined to last less than the originals.

4.2 Textual criticism, hermeneutics and restoration of silent films

> Among the synonyms of *faithfulness* the word *exactitude* does not exist. Instead there is loyalty, devotion, allegiance, piety.
>
> Umberto Eco[45]

After having considered a restored film as a text in the preceding section, I now turn to the possible contributions to the theory of film restoration that can be derived from textual criticism (also known as philology) and from hermeneutics (the art of interpretation). Massimo Carboni has already proposed a number of interesting links between Hans-Georg Gadamer's hermeneutic philosophy and Cesare Brandi's theory of restoration.[46] In this final section of my last chapter I shall consider Carboni's reflections and assess the usefulness of a hermeneutic perspective for the specific problems of film restoration. Even though Gadamer and Brandi's most important works were almost coeval (*Wahrheit und Methode*, 1960; *Teoria del restauro*, 1963), they have not often been analyzed in their possible interactions, because of their different philosophical premises, and also because Gadamer did not tackle the issue of restoration in any depth.[47] Nevertheless, they have much in common and it is worth comparing them to shed new light on the central issues involved in film restoration.

Before getting on to hermeneutics, I should like to suggest a comparison between film restoration and textual criticism on the basis of two properties that written and printed texts share with films. Firstly, they can only be apprehended in time, in duration, not in an instant like a painting or a sculpture. Secondly, they often exist in

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[45] Eco, *Mouse or Rat?*, p. 192.

[46] Massimo Carboni, *Cesare Brandi: teoria e esperienza dell'arte* (Roma: Editori Riuniti, 1992), pp. 107-23. Massimo Carboni, 'Il restauro come ermeneutica practica: Brandi e Gadamer', in *La teoria del restauro nel novecento da Riegl a Brandi*, ed. by Enrico Petti and Paola Pogliani (Florence: Nardini, 2006).

[47] Gadamer deals with restoration only briefly: see Hans-Georg Gadamer, *Truth and Method* (London: Continuum, 1975-2004; repr. 2006) pp. 159-61.

multiple versions or editions and there may be no extant 'original'. Consequently, there are a number of possible parallels in the philology of films and that of literary texts, including the construction of stemmata (as in the case of *Cabiria*, examined in 2.4 above), the question of attribution (as with the film formerly known as *L'Errante*, discussed in 2.1), the choice to be made between producing critical or diplomatic editions (*Gli ultimi giorni di Pompei* in 2.3), the reconstruction of the text (*Maddalena Ferat* in 2.2), and so on.

Broadly speaking, it is possible to detect two main traditions in textual criticism: the first descends from Karl Lachmann, whose school established as its main concern the aim of reconstructing the 'best' version; the second is the Italian and French school, aimed at reconstructing the entire tradition of the text with all its variants. Interestingly, these two theoretical trends seem to mirror respectively not only Brandi's dualism of aesthetic case and historical case but also the different purposes of a pragmatic film restoration for public projection on the one hand and one for archival preservation/conservation and scholarly documentation on the other.

A brief historical outline of the major trends in textual criticism may provide a clearer insight into the theoretical framework here. Textual criticism has been constantly evolving towards a less schematic approach to the text than in the past. The method developed by Lachmann in the early nineteenth century and notably exemplified by his 1850 edition of Lucretius's *De rerum natura* founded the modern critical edition of a text on a series of steps: *recensio*, *collatio*, *eliminatio codicum descriptorum*, *stemma* construction and *emendatio*. The method was subsequently subjected to much criticism. Joseph Bédier objected that it was too rigid and rarely efficient, since in most cases its outcome was that the tradition of a text could be

divided into two branches only.[48] The bipartite stemma did not allow the philologist to apply a mechanical and 'objective' majority criterion, since in practice he or she had to choose arbitrarily between the two branches. Bédier also noted that the method produced composite texts that had never existed in reality. He therefore proposed that philologists should abandon their pretence of a 'scientific' choice and simply work on what they considered to be the best manuscript, according to their taste (the *bon manuscript* in his words), reconstructing only that one and emending its most evident textual corruptions, namely scribal rather than authorial features.

Giorgio Pasquali rejected this position, even though he endorsed in part Bédier's observations on the importance of the history of transmission of manuscripts as individual objects, each of them situated in a precise historical context.[49] Pasquali, linking his work to Lachmann's method, theorized that philologists ought to produce critical editions, scientifically grounded, which could not be simply the faithful reproduction of only one source, even when it was the 'best' among the extant texts.[50] Michele Barbi and Gianfranco Contini, other exponents of the Italian school of philology, gave even more importance not only to the history of the transmission of texts, but also to the cultural and linguistic context in which they were conceived.[51]

These diverging positions seem to be based on different philosophical grounds and to aim for different goals: the French school emphasized the concept of *mouvance* (Paul Zumthor) or *variance* (Bernard Cerquiglini), while the Italian school sought to

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[48] Joseph Bédier, 'La tradition manuscrite du Lai de l'Ombre: réflexions sur l'art d'éditer les textes anciens', *Romania*, 54 (1928), 161-96 and 321-56. Sebastiano Timpanaro summarizes Bédier's thesis and the subsequent following debate among scholars in *The Genesis of Lachmann's Method*, trans. by Glenn W. Most (Chigago: The University of Chicago Press, 2005), pp. 158-61, 208-10, 229.

[49] Giorgio Pasquali, *Storia della tradizione e critica del testo*, 2nd edn, 1st edition 1934 (Florence: Le Lettere, 1952).

[50] It was Pasquali who proposed the famous motto about the historical accuracy of more recent manuscripts: '*recentiores non deteriores*' (in Pasquali, pp. 41-108). This position reinforces the validity of Cherchi Usai's determination in examining the 16 mm. American copy of *Cabiria* in order to find the famous shot in which the infant Cabiria is seized by two greedy hands. This image was missing from the 35 mm. copies.

[51] Michele Barbi, *La nuova filologia e l'edizione critica dei nostri scrittori: da Dante a Manzoni*, 2nd edn (Florence: Sansoni, 1952), pp. xxiv-xxv, and Gianfranco Contini, *Breviario di ecdotica* (Turin: Einaudi, 1986), pp. 45-6.

trace the history of the different sources, in order to acquire the best approximation to the original text.[52] The concept of *mouvance* emerged thanks to Zumthor's work dealing with medieval French manuscripts. Zumthor links authorial anonymity with textual variation, since many vernacular manuscripts by anonymous medieval authors presuppose a situation where authorship was not considered important. It was perfectly legitimate for anyone to take an existing literary work and vary or recast it in different terms, especially since most works of literature were transmitted through oral storytelling, as in the case of medieval cycles and romances. Zumthor calls this phenomenon 'mouvance', emphasizing the need to redefine the concept of 'work' (*oeuvre*) as a communal, not an individual, process of creation. Cerquiglini builds upon this notion by criticizing the idea of the existence of a single author, arguing that philological editing work in constant search of an author will inevitably, in this case, lead to an historical misinterpretation.[53] Even worse, editors might subscribe to Bédier's method of choosing the best manuscript, presenting a fixed, crystallized text. Interestingly, Cerquiglini suggests that an electronic edition be prepared instead, thus allowing a reproduction of the medieval work in its actual variance.[54]

Tim William Machan takes a further step on the same theoretical path traced by Cerquiglini. He argues that a modern edition of late Middle English manuscripts, once the concepts of author, work and text have been reconsidered, should aim to 'recover not an authorized text behind a number of documentary ones – as in the case in traditional textual criticism – but the work behind a document.'[55] Thus, the focus is effectively shifted towards the historical and social contexts of production rather than

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[52] Paul Zumthor, *Essai de poétique médiévale* (Paris: Seuil, 1972), pp. 84-96; Bernard Cerquiglini, *Éloge de la variante: histoire critique de la philologie* (Paris: Seuil, 1989), p. 120; Roland Barthes, *Variazioni sulla scrittura*, ed. by Carlo Ossola, transl. by Carlo Ossola and Lidia Lonzi (Turin: Einaudi, 1999), p. 58.
[53] Barthes, p. 58.
[54] Ibid., p. 116.
[55] Tim William Machan, *Textual Criticism and Middle English Texts* (Charlottesville: University Press of Virginia, 1994), p. 184.

the form of an 'original' that is as ephemeral as it is irrecoverable.

This brief outline of the theoretical premises of different philological schools may be useful in establishing analogies to the different approaches of conservators in restoring silent films. While the debate within textual criticism tends to centre on texts produced before the invention of the printing press, important theoretical contributions have also dealt with problems emerging during the print era, and it is this dimension that seems to me to bear some analogy with films. In fact, in so-called textual bibliography, the main aim is to distinguish the author's interventions from those made by press operators (editors, typesetters and proof-readers) and to transfer this information to the critical edition.[56] It is possible to establish a parallel with film restoration since restorers try to eliminate mechanical 'errors' (visible framelines, flickering, unsteadiness, inverted shots) and traces of external intervention (cuts made by censors) from the new 'restored' copy, giving back to the film its original physical integrity.[57] Distinguishing 'authorial' intentions from 'typographic' intentions may be even more problematic in film restoration than in textual bibliography, because of the almost complete lack of technical documents from film production laboratories. There are no documents comparable to the ones originating from the Officina Plantiniana at Antwerp, dating back to the sixteenth century, or from Cambridge University Press, dating back to the seventeenth.[58]

It seems, then, that in textual criticism – as in film restoration – there are at least two schools of thought: the first aims to reconstruct an archetype, a text as close as possible to the supposed original; the second is more concerned with the historical and

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[56] Conor Fahy, 'Introduzione alla "bibliografia testuale"', *La Bibliofilia* 82 (1980), 151-81. For a first approach to this problem see Pasquali, pp. 109-185. For an overview of recent approaches see *Filologia dei testi a stampa*, ed. by Pasquale Stoppelli (Cagliari: CUEC, 2008).
[57] Wallmüller, p. 79.
[58] Leon Voet, *The Golden Compasses: a History of the Printing and Publishing Activities of the Officina Plantiniana at Antwerp*, 2 vols (Amsterdam: Vangendt, 1972) , and Donald F. McKenzie, *The Cambridge University Press 1696-1712: A Bibliographical Study*, 2 vols (Cambridge: Cambridge University Press, 1966).

cultural framework in which the text was produced and with documenting its tradition. Interestingly, the first line of thought somewhat resembles Brandi's theoretical premises about the work of restorers, with regard to what he considers the 'aesthetic case', while the second line of thought seems more closely connected to what he termed the 'historical case'.[59]

Michele Canosa labels the first type 'static' philology, since it traditionally looks at the literary text as a 'fact', a fixed text, while the second, the so-called 'New Philology', is seen by him as 'dynamic', since it considers a literary work as an 'act'.[60] Thus, what is at issue is not the reconstruction of a conjectural original but the fortune of the received text, since this school of thought advocates 'the equality of all textual versions'[61]. In the case of early films, this theoretical approach seems to be more productive and appropriate. Canosa suggests that the aim of the film restorer's work should be to reconstruct not an original, which perhaps never existed, but 'moments of crystallization […], observable instances that historically existed and can be documented'.[62] In the case of a film restoration, it is significant that Nicola Mazzanti admits that the 'goal of restoration' of silent films might be 'the reconstruction of a single version' given 'the substantial interpenetration of the different versions'; Paolo Cherchi Usai, in turn, claims that 'the "original" version of a film is a multiple object fragmented into a number of different entities equal to the number of surviving copies.'[63] It is worth underscoring that – theoretical considerations aside – film restoration presents technical and aesthetic problems of visual coherence (e.g. shots from different points of view, photographic quality, rhythm of acting). Thus, if restorers

[59] Brandi, *Theory of Restoration*, pp. 65-76.
[60] Canosa, 'Per una teoria del restauro cinematografico', pp. 1116-8.
[61] Kurt Gärtner, 'Philological Requirements for Digital Historical-Critical Text Editions and Their Application to Critical Editions of Film', in *Celluloid Goes Digital: Historical-Critical Editions of Films on DVD and the Internet. Proceedings of the First Internat*ional *Trier Conference on Film and New Media*, October 2002, ed. by Martin Loiperdinger (Trier: WVT, 2003), pp. 49-54 (p. 52).
[62] 'Momenti di cristallizzazione […] attestazioni storicamente esistite e documentabili', see Canosa, 'Per una teoria del restauro cinematografico', p. 1116.
[63] Cherchi Usai, *Silent Cinema*, p. 160.

establish a link between shots from different sources, they might be actually *re-inventing* a film, which never existed in that form.

Actually, in the last few years editors seem to have adopted an increasingly complex approach to the reconstruction of literary texts, which takes into account the different kinds of audience to which a work may be presented. This concern becomes especially evident when one considers, for example, theatrical texts, which have to be 'performable' – exactly as in the case of films – and are presented to an audience in a particular moment in time, obviously with no critical apparatus. The latest Arden edition of Shakespeare's *Hamlet* is an interesting case in point.[64] The editors, Ann Thompson and Neil Taylor, have presented in two volumes a multi-text edition of the earliest three printed texts: the first Quarto (Q1, 1603), the second Quarto (Q2, 1604-5) and the first Folio (F, 1623). Since there is no autograph manuscript, these are the only sources for this play. The editors explain their editorial choice to print all three versions, different in length and in many features (e.g. names of characters, dialogues): 'a reader can choose to read each version separately' since 'each of the three texts has sufficient merit to be read and studied on its own.'[65]

Overcoming the difficulty of choosing which of the printed texts should be edited, Thompson and Taylor take the decision to edit all three, not only providing a critical apparatus, but investigating the evolution of the text as well. It must be noticed that Arden editions are directed to an audience composed mainly of scholars, while in a more popular edition editors would be compelled to present the literary work in a much more straightforward way, in order to make it more accessible to a wider audience. The editorial practice of changing original punctuation or spelling in favour of a modern and more comprehensible text is widely accepted for literary works of the past, and ordinary readers welcome the presentation of only one source, even in a historical-critical edition

[64] *Hamlet*, ed. by Ann Thompson and Neil Taylor (London: Arden Shakespeare, 2006).
[65] Ibid., p. 11.

with its critical apparatus. However, this more straightforward (or more marketable?) editing approach is perhaps necessary when dealing with a theatrical text, which will presumably be performed in only one of the many possible variations. Something similar can be said about the restoration/reconstruction of films: on the one hand there is a scholarly requirement to adhere to scientific criteria, providing accurate documentation of the source material and editorial choices, while on the other hand there is the demand created by audiences who would like to enjoy films on screen.

Another consideration complicates this matter: most films were conceived as popular entertainment in their day (apart from some cases, such as *Cabiria*, with high-cultural pretensions) but have since become 'works of art', and are treated as such by restorers and screened to relatively small and specialized audiences in festivals. Again, the issue at stake is the conflict between two differing demands in working both on theatrical plays and on films: the demand created by scholars for a historical-critical edition, and the audience's expectations of being entertained. The question overlaps with the issues discussed in the section on lacuna (3.2): different considerations affect the decisions to restore or conserve in practice. This includes the question of whether one should respect the integrity of the work or consider the demands of the public. Simply put, film viewers today may not want to watch strips of black film indicating a lacuna.

One might ask, in passing, whether there is a substantial difference between cinema and other forms of 'art' because of its emphasis on the dimension of entertainment: perhaps this would explain, at least in part, why film restorers are more concerned with the completeness of films than the recognizability of their interventions and the effort of presenting a critical edition. Whatever the case may be, lacunae in cinema, as in theatre for example, are generally perceived as more disruptive than in literature. Perhaps this is linked specifically to the visual nature of these arts. While a

critical apparatus may propose different hypotheses of reconstruction of a literary work, nothing similar can be offered to cinema or theatrical audiences, short of making detectable the reconstructed intertitles through visual devices (e.g. different typeface from the original, absence of decorative frames).

However, it seems that in the last few years an increasing concern for finding methodological standards in order to present historical-critical editions of films has emerged. Digital editions on DVD are a step in this direction. On the one hand, different types of material might be made available through navigable menus on the DVD itself; on the other, links to web sources, accessible when the disc is played on a computer, might offer the possibility of pointing the interested audience to online data, which can be continually expanded and updated. One advantage would seem to be that all the available information can be made accessible to scholars. This may include various materials, both audio-visual – with juxtaposed variants to be compared (e.g. editing, colour, photographic quality) – and extrafilmic material (e.g. screenplay, information about technical and artistic crew, about costs and income, stills).[66]

It should be stressed, however, that if 'the new medium DVD offers a considerable short cut for researchers, who are spared a trip to the film archives'[67], it cannot present *all* the information that a scholar may need. While it might be possible to produce a sort of 'philological report' of important information that has been ascertained by a researcher working in an archive, many of the physical clues that may be observed on the stock itself will not be directly ascertainable by the researcher working exclusively on the digital data made available. One instance is that of edge data, which are so important for establishing the date of production of a film stock. Inspection of the films themselves also reveal details on the film production companies or details useful to identify the original colours (see for instance 2.2 above on

[66] Gärtner, p. 53.
[67] Ibid., p. 54.

Maddalena Ferat); other examples are the perforation shape, punched marks, aspect ratio, film stock material, nature and stage of damage (scratches on the emulsion and/or on the base, shrinkage, stains). The list might be longer, but here I simply want to point to the potential risk of an operation in which scholars may become detached from the film as a multiple physical object with its own physical history. One possible consequence of this is that the digital version could come to be treated as a sort of ideal film, a *simulacrum* of a film that never actually existed, whose accessibility and convenience encourages audiences to enjoy it on television or computer screens in solitary contemplation, making it increasingly difficult to grasp the cultural horizon of this peculiar means of aesthetic expression. This risk may be reduced or even overcome if the digital material is presented with rigorous scholarly criteria, in the same way as a critical edition of a text may effectively substitute perusal of a manuscript for many scholarly purposes. However, this kind of presentation will not replace or obviate the need for scholarly work on the original materials, since the ability to 'read' physical signs on a film in an archive is similar to the ability to read a manuscript and interpret even a small detail of punctuation as a telling clue about its cultural world and mode of production.

Film restorers must take into account all the material they can collect and compare it: in so doing, they will inevitably produce an interpretation of the text. In order to explain this statement and take a few steps further towards defining the contribution of the philological method to film restoration, I will now take into account the theoretical input of hermeneutics, specifically in the work of Gadamer, which, as I mentioned above, has been fruitfully applied by Massimo Carboni to read Brandi's theory of restoration.

In his most important work, Gadamer develops some of the insights provided by Friedrich Schleiermacher, Wilhelm Dilthey, George Wilhelm Friedrich Hegel and

Martin Heidegger.[68] First of all there is his famous tenet that any process aimed at understanding a text, be it written or visual, is conditioned by a historical and cultural context: this is what Gadamer calls *prejudice* (a term that recalls Heidegger's 'fore-sight' and 'fore-conception'), literally what comes *before* the act of understanding, and which influences interpreters in dealing with a text.[69] Far from being negatively connoted as a false or unfounded judgement, prejudice for Gadamer is the only way that interpreters can understand texts, since both text and interpreter are part of history.

Gadamer stresses three fundamental concepts in his work: the hermeneutic circle, application, and dialogue. The first two were already known in past hermeneutics, but it was Gadamer who posited them as worthy of speculation, whereas the third is borrowed from the model of Platonic dialectics. 'Hermeneutic circle', a term apparently coined by Dilthey, generally indicates the principle that 'the interpretation of a part requires a prior understanding of the whole' and vice versa.[70] This implies that a better understanding of a text is always possible through a continuous process of reciprocal influence between the interpretation of single parts of a text and the whole text. At a deeper level, the hermeneutic circle encompasses the reciprocity between texts and interpreters, where the parts are the interpreters in the flow of history, and the whole is the text, continuously generating different meanings throughout history. In an attempt to describe graphically this concept, perhaps it might be better to represent it with a spiral rather than a circle (Fig. 4.4).

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[68] Gadamer, *Truth and Method*.
[69] Gadamer, pp. 271-8. Cf. Martin Heidegger, *Being and Time*, transl. by John Macquarrie and Edward Robinson, 27 edn (Oxford: Blackwell, 2005), pp. 188-95.
[70] Thomas Mautner, *Dictionary of Philosophy*, 2 edn (London: Penguin, 2005), p. 274.

Fig. 4.4 A graphic representation of the 'hermeneutic circle' applied to film restoration as a spiral: the interaction between prejudice and successive understanding creates a never-ending process of interpretation. (Author's diagram)

In traditional hermeneutics, 'application' is a term related to the field of sacred or legal texts that need to be interpreted in the present time: in the case of religious texts, the application of an interpretation to a specific problem in time will be needed to apprehend God's will and effect spiritual renewal in order to save one's soul; in the case of legal texts, application will serve to inflict a specific punishment in pronouncing a sentence. In both cases the task of the interpreter is to apply the sense of the texts to an existential, cultural, historical context. Such a context, no longer the original one, is obviously the interpreter's.

In hermeneutic ontology, application is the fundamental moment of every act of

understanding, and it embraces 'the fusion of horizons'[71] of the *interpretans* (the person who interprets) and *interpretandum* (what needs to be interpreted). Gadamer uses this expression to mean 'the experience of a tension between the text and the present'[72]. The interpreter has the task of mediating between the past, to which the text belongs, and the present time of interpretation. In doing so, however, s/he cannot ignore the tradition in which s/he is inserted.

'Dialogue' is the special form of knowing, taken from classic Platonic philosophy, which produces the truth through a confrontation between interpreter and text, present and past. Dialogue is the art of questioning and listening, enabling the emergence of something that does not belong only to one or to the other, but is common to both.[73]

In this perspective, Gadamer considers even the temporal distance between past and present not as an obstacle, but as a possibility to experience the truth. Every new understanding is inserted and interwoven with the history of effect (*Wirkungsgeschichte*) of past interpretations over time.[74] Thus, the history of effect influences the *interpretans* and mediates his prejudice about the *interpretandum*, even though such prejudice remains unrecognized. Since interpretation is the act of challenging prejudice and furthering knowledge, a new act of understanding produces a new sense and emerges as the last link in the never-ending chain of interpretations.

Restoration, whatever definition is assumed for it, implies an intervention on objects/texts/works of the past, which are worthy of being preserved and passed on to future generations, so that they may be enjoyed over and over again. Thus, the prerogative of restoration is to get in touch with the past through works of art of the time, preserved in the present.

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[71] Gadamer, p. 305.
[72] Ibid.
[73] Ibid., pp. 359-71.
[74] Ibid., pp. 299-304.

There are at least three categories of analogies between Gadamer (hermeneutics) and Brandi (restoration): time, interpretation and text. Firstly, Brandi theorizes three moments in the life of a work of art: the time in which the work is created ('duration'), the time between the end of the creation and the present ('interval'), and finally the time in which the work of art is recognized as such, 'like a bolt of lightning' ('instant').[75] Thus, in dealing with restoration Brandi believes that both the restorer's presumption of intervening in this duration, trying to replace the artist ('restoration by fantasy'), and the attempt to 'return the work to its original state and erase the elapsed time' ('restoration by *reperfecting*') are to be considered as restorers' mistakes.[76] The only time in which restorers can legitimately intervene, without presuming to reverse time or abolish the history of works of art, is the present. This tenet implies that every act of restoration is transitory because restorations, exactly like works of art, are inserted in the *continuum* of historical time.

This position mirrors Gadamer's theorizations of the hermeneutic circle and the *Wirkungsgeschichte*. 'The hermeneutic task consists in not covering up this tension [between the text and the present] by attempting a naïve assimilation of the two but in consciously bringing it out.'[77] In this perspective, a *neutral* intervention of restoration cannot exist (even duplication is not neutral, as in Mazzanti's opinion)[78], since the restorer is an interpreter who is influenced by his own cultural horizon. Therefore, in Gadamer's thought, time is not a gap that must be filled, but a positive condition through which it is possible to acquire a more profound kind of knowledge.

Secondly, the act of restoration, in Brandi's words, is 'a true historical event […], part of a process by which the work of art is transmitted to the future.'[79] The

[75] Brandi, *Theory of Restoration*, p. 61.
[76] Ibid., p. 63-4.
[77] Gadamer, p. 305.
[78] Mazzanti, p. 25.
[79] Brandi, *Theory of Restoration*, p. 64.

prerequisite of this intervention ought to be the recognition of a work of art as such, a 'bolt of lightning' that arises from what Gadamer calls the 'historical and cultural horizon', and encompasses an interpretation ('application' in Gadamer's words) aimed at an ever better understanding of the work of art.

It is on the basis of the analogy between Brandi's insistence on the restorer's recognition of the distance between time of creation and time of restoration and Gadamer's insistence on the hermeneutic importance of the cultural distance between the text and the present that Carboni presents restoration as a practical hermeneutics, namely a kind of hermeneutics whose outcome is a hypothesis not only theoretically expressed but also applied, put into action.[80] Exactly as judges must apply laws in judicial procedures of legal interpretations, so restorers must 'translate' the general principles of restoration into an intervention that is a form of practical interpretation. Another example that may help to delineate this concept comes from Eco, who repeatedly speaks about the translator's task of 'negotiating' between authors and readers of literary texts.[81]

The theoretical framework explored so far may provide a number of insights into the restoration of silent films. Assuming that a silent film is a complex text, composed of variants often produced simultaneously (for instance by multiple cameras shooting at the same time from slightly different angles) and of a number of prints that may have different editing and colours, the restorer's task appears to be primarily philological and hermeneutic. The collection, comparison and study not only of the available prints in each part but also all extra-filmic material (e.g. scripts, censorship and production documents, stills, edge data) are all activities which provide the restorer with a privileged position from which to 'understand' and 'interpret' films, 'mediating' between the past and the present, between something that is familiar and something that

[80] Carboni, 'Il restauro come ermeneutica pratica', pp. 329-33.
[81] Eco, *Mouse or Rat?*, p. 173.

appears extraneous, difficult, utterly 'other'. On the assumption that the restorer's work of negotiation may be more or less source- or target-oriented, what is at stake is that the final product, a sort of 'restorer's cut', will result in a new step in the appreciation of the film.

To enable contemporary audiences to enjoy a work of art in any medium, the work of art must be recognized as such, in a process in which 'the work of art strikes consciousness'.[82] This recognition may happen in a duration of time that 'cannot be subdivided in the same way as the historical time in which it occurs'.[83] Such an intuition (Carboni compares it to Heidegger's *Stoß*, the 'thrust' or 'blow' of the work of art)[84] cannot be simply individual and subjective, but must become socially and culturally shared, since 'a work of art can take […] years in which all elements that serve to explain either the semantic value of the image, or the particular figurative nature of that image, are brought together and into focus.'[85] Interestingly, Brandi exemplifies this occurrence with excavation, 'the preliminary phase of the work of art's reactivation in individual consciousness'[86]. The metaphor of excavation seems to reinforce the idea of an epiphany of a work of art to consciousness – not only the restorer's consciousness, but also the general public's. This is why film archives, before they make any choice about *how* to restore, must primarily deal with the ethical task of choosing *what* to restore.

Gadamer's hermeneutic circle seems to provide another useful framework for a theory of the restoration of silent films. A silent film consists visually of scenes, shots, frames and colours, which are parts of a whole. In addition, there are also sounds, music, the lenses of projectors and coloured filters, which are other 'detached' parts of

[82] Brandi, *Theory of Restoration*, p. 61.
[83] Ibid., p. 77.
[84] Carboni, *Cesare Brandi*, p. 119.
[85] Brandi, *Theory of Restoration*, p. 77.
[86] Ibidem.

the same text, and which have often disappeared, leaving no trace. Furthermore, there is a context (literally something that goes with the text itself) that restorers ought to know (places of exhibition, conditions of projection, printing and colouring techniques). The interpretation of all these parts leads to a better understanding of the film on which restorers are working in order to transmit it to future generations: obviously, the understanding of the whole text (e.g. the watching of a whole film on a screen) has a positive influence on the understanding of the single parts (e.g. the use of colours). Furthermore, following Cherchi Usai's definition of a (silent) film as 'a multiple object fragmented into a number of different entities equal to a number of surviving copies', it can also be assumed that every new print generated by a restoration can contribute to the process of interpreting a film and – at the same time – it can testify to the ways in which a work of art is passed down over time. A case in point might be, for instance, the use of coloured intertitles in the 1986 restored copy of *Maddalena Ferat* (white letters on a cobalt blue background): at this time no philological care was given to these parts of silent films. Similarly, the habit of printing coloured silent films in black and white was what made the scenes set at night in *Nosferatu* incomprehensible. A recent attempt (2006) to reconstruct the silent version of *Cabiria* (1914) provided new insights into this film: the scenes that Pastrone shot in 1931 for the sound edition were identified and removed from the previous work of restoration (1995) – which had been based on a misunderstood principle of completeness – in order to reconstruct the 1914 version.

While the restoration of films seems to confirm the appropriateness of the idea of the hermeneutic circle, there are of course differences between the hermeneutics of literary texts, that of traditional visual works of art (paintings, sculptures, monuments), and films. One difference is that, as Carboni notes, textual criticism is based on a metalanguage that runs parallel to the language-object, whereas visual works of art are more or less radically transformed by the restoration itself, which modifies them in

material ways. In a critical edition of a text, the original work is not modified (though choices are made as to what to present as 'text' and what as 'variants' or discarded readings, with the latter being placed in notes along with explanations), whereas an intervention on a visual form of art will always modify its material aspect.[87] In film restoration there is a further distinction to make: while a restored painting, sculpture or architectural monument resembles a palimpsest on which different interventions overlap, the manipulation of film (and extra-filmic) material is aimed at producing another 'new' text, distinguished from the other previous copies (almost an example of the Gadamerian history of effect, *Wirkungsgeschichte*).

The restoration of films can legitimately be defined as a hermeneutic discipline in which every new restoration produces a film that may be partially considered to be as original as the work itself, and inserted into an imaginary historical spiral in which the act of interpreting creates a better understanding of the work and new prejudices, which consequently will create new interpretations.

However, it should be stressed that a silent film shown to an audience today is only one part of the 'play' that people enjoyed at the time when it was made. Such was also the case, for example, with classical Greek tragedies, whose texts have survived today, while their music, choreography, and set design have been lost. The context itself is different, since this kind of theatrical representation is no longer part of feasts (e.g. the Dionysia), and theatres no longer have a semi-circular shape. A loss of context is inevitable for many other kinds of works of art: paintings cut and framed differently from their original state, and taken away from their original location (for example moved to an art gallery from a building where they originally formed part of an integral design); sculptures and friezes seized from original temples and exhibited in museums (e.g. the Elgin marbles); temples dismantled and reassembled in new locations (e.g. Abu

[87] Carboni, *Cesare Brandi*, p. 115.

Simbel). Gadamer describes these occurrences quoting Hegel's poetic similitude, in which such works of art are represented as 'fruits torn from the tree'. Unfortunately, 'we have not the real life of their being – the tree that bore them, the earth and elements, the climate that constituted their substance, the seasonal changes that governed their growth.' This explains why 'putting them back in their historical context does not give us a living relationship with them but rather a merely ideative representation (*Vorstellung*).'[88] Gadamer moderates Hegel's pessimism with Schleiermacher's hope of reconstructing the original world of the authors, and 're-establishing the original situation which the creative artist had in mind', moving away from the (artistic) authors' perspective to approach that of the receivers (viewers, spectators, audiences).

Further on, Gadamer links the ontology of the work of art with two concepts: 'play' (*Spiel*: also game and drama) and 'periodic festival'.[89] Both processes take place 'in between' (being and representation, player and spectator, past and present). The representational character of play is evident, since players follow rules that they have not created; they suspend the aims of a practical life and assume another identity. Thus, they simultaneously play and 'are played', re-presenting (in the sense that they 'make present') and revealing the game itself. In theatrical representation, 'the difference between the player and the spectator is […] superseded' since 'the requirement that the play itself be intended in its meaningfulness is the same for both.'[90] The festival is linked to the idea of making something real at the present time. Every celebration is intimately connected with the past, but takes place in the present time, and – even though it is ritualized and presents itself always in the same form – 'a festival exists only in being celebrated'[91].

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[88] Gadamer, p. 159-61.
[89] Ibid., pp. 102-25.
[90] Ibid., p. 110.
[91] Ibid., p. 121. Gadamer refers to Søren Aabye Kierkegaard's religious experience: in Kierkegaard's thought, the individual consciousness must mediate the present with the saving action of Christ, so that

It is evident that both in play and in the festival – which in Gadamer's thought are similitudes used to penetrate the ontology of works of art – the common denominator is being real only in the present time, in the moment in which players and spectators take part in them. In the repetition of games or celebrations, imitation (*mimesis*) leads to a more profound understanding of their essence. This happens because 'the cognitive import of imitation lies in recognition', which does not simply mean dealing with something already known, but knowing *more* than is already familiar.[92]

Gadamer calls this process 'transformation into structure' (*Verwandlung ins Gebilde*);[93] art is the first model of transformation into reality, which through a work of art emerges in its essence, becoming more real than reality itself. This is why art can be intended as 'imitation' not only when it is a naturalistic reproduction of the extant, but also when it becomes an active 'reception' that provides spectators with a new consciousness/understanding of themselves. Art is a cognitive encounter, an epiphany of truth, *Erfahrung*.

Interestingly, the essence of the work of art appears independent from 'players' and 'spectators', bearing a truth that remains in time. This assumption may be referred to the field of restoration as well. If one substitutes 'players' and 'spectators' with restorers and audience, and 'work of art' with film, film restoration can be defined as an activity that by *re-producing* a film makes it visible and 'viewable', allowing a more profound understanding both of the film itself and of the restorer's activity.

Thus, the restoration of silent films would seem to be a form of 'imitation', which is not to be intended as a simple 'mechanical reproduction', but a form of 'simulation' that adds new meanings to the work. In this respect, it is important to make

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this (Christ's action) does not remain a remote historical fact, but is actualized and experienced in the present. Ibid., p. 124.

[92] Ibid., p. 113.

[93] Ibid., p. 110.

an effort, at the very least, to keep alive the physical means of reproduction and projection that films were born with: in brief, a film should remain something that is projected onto a screen, in certain lighting conditions, in a public setting, and not merely for nostalgic reasons, but in order to ensure that films as historical documents may survive. Interestingly, Lindsay Kistler Mattock draws attention to the need for an archival code of ethics 'in the age of digital reproduction', pointing to the risks of an inconsiderate use of digital in film restoration.[94] This 'transformation into structure' implies that restorers should try to preserve the essence of films and their pertinent recognizable elements over time, taking into account the transformation of technical means (e.g. projectors, screens, production, live music and sound effects, but also the continuous improvement of digital technology) and reception contexts (not only cinema theatres, but also cultural, social and psychological horizons). Indeed, it would be anachronistic and naïve to attempt a reconstruction of a historical context which no longer exists, as Schleiermacher advocated. Such a reconstruction might serve as a tourist attraction (like the living museum), but has no appeal as an authentic re-presentation. Undoubtedly, commercial interests press film archives to exploit their work in the attempt to raise funds and to obtain cultural prestige. Indeed, there is an increasing attention of copyright holders together with film production and distribution companies to exploit films, regardless of scientific or philological care. As they grapple with funding issues, film archive conservators may decide to put their restoration work on hold by stopping at the preservation stage – namely the production of intermediate material to be used in future restorations – whereas film distributors will adopt a more pragmatic approach in order to attract as large an audience as possible, often presenting as 'restoration' a work of digital mastering.

In conclusion, it is indeed possible to maintain that to label an intervention on

[94] Mattock, 'Form Film Restoration to Digital Emulation', 74-85.

silent films a ‘restoration’ means to recognize it as the result of an hermeneutic effort to mediate between the present and the past, a sort of ‘translation’ that attempts to compensate for inevitable losses. The result of a film restoration will be the existence of two (or more) works which must considered as bearers of an irreconcilable difference: the ability to distinguish them rests with the audience and in the dynamics of reception.

Conclusion

The notion of an 'authentic' restoration is a cultural oxymoron.[95]

In this thesis I have described and critically assessed existing practices of film restoration, providing a more solid theoretical discussion of it than has existed hitherto. My particular focus has been on silent films, complex works in which the concept of 'original' is uncertain. In addition to providing first-hand case studies of the restoration of four Italian films the thesis has, I would claim, made two distinctive new contributions to the discussion of restoration of silent films. The first is its systematic cross-comparisons between restoration in other arts and film restoration, which have aimed both at placing the latter in a wider context of restoration practices and at illuminating its distinctive features, such as easier reversibility and greater orientation towards public presentation. The second is the elaboration of Carboni's initial suggestions that a productive fusion might be made of the approaches of Brandi and Gadamer. From my own reading of Gadamer's work I have developed the conviction that hermeneutics can be a practical art, through which restorers can take conscious and well-informed decisions, without these decisions having to be predetermined right from the start of their work. This is why the title of the thesis suggests a progression toward a practical hermeneutics of film restoration.

After setting out in the first chapter the reasons for the loss and deterioration of early films and adumbrating the main questions and definitions of restoration and related concepts (conservation, preservation), I made in the second chapter a close examination of four cases of representative works of film restoration in order to focus on the central issues: attribution, restoration of colours, restoration of music, decisions

[95] Cherchi Usai, *The Death of Cinema*, p. 101.

about which version/s to restore and how. I then compared in the third chapter, in an historical perspective, the different schools of thought on art restoration with the practice of film restoration. In the fourth chapter I sought to define what a restored film is through Eco's semiotic reflections on the nature of copies and then, finally, I considered the viability of connections between Brandi's *Theory of Restoration* and Gadamer's *Truth and Method* in an attempt to assess the aims and results of the work of film restorers.

In the comparison of film with art restoration, I identified two questions as especially interesting and productive: the treatment of patina and lacuna. Film restorers have traditionally been less concerned with patina, even though it has given rise to a fierce debate among the restorers of the 'major' arts about whether, how and to what extent patina should be eliminated from works of art to bring them as close as possible to their original state. In the modern theory of restoration in these arts the signs of the passage of time have acquired a particular value, at least from an historical point of view, yet such a perspective is not widely applied to film restoration. As for the treatment of lacunae, both of a figurative and narrative nature, in film restoration it has given rise in practice to an imitative approach aimed at reproducing the best and most complete version possible, as my case studies of *The Last Days of Pompei* and *Cabiria* have illustrated. The focus of film restoration has generally been on the technical means of avoiding distortions resulting from modern material and equipment, and perhaps it has also been more influenced by the public's demand to watch a film without too many 'disruptive' faults. This is particularly true for narrative lacunae, where the scholar's (and the audience's?) 'obsession' with completeness often enters into conflict with other criteria, such as those of visual coherence or consistency, which can push restorers to go so far as to discard frames of inferior photographic quality.

Interestingly, in art restoration a 'purist' school of thought, deriving from

Ruskin, has preached the need to leave works of art untouched, even highlighting the romantic beauty of art in a 'ruined' state. This would not be possible in film restoration, because of the ways in which visuality is tied up with narration: audiences are generally not willing to watch bits of film without a clear narrative flow. In addition to aesthetic reasons, the need to fill in narrative lacunae comes from the principle of adhering to the integrity of films, avoiding editing errors that would recreate a film that never existed in the past (see the solution of using summary-intertitles adopted in the restoration of *Maddalena Ferat*).

In theory, however, film restorers recognize the principal tenets of restoration (recognizability, reversibility, and transparency, that is documentation of interventions) even though they do not thoroughly and invariably comply with them in practice. The criterion of reversibility is implicitly fulfilled in film restoration (more so, indeed, than in some other arts, such as painting or monuments, where it is often difficult to achieve in practice) by the fact that restoration tends to produce first and foremost a duplication of original material, which is hopefully left undamaged after the restorer's intervention. Recognizability and documentation, by contrast, seem to be more neglected areas. It is usually possible to detect the restorer's hand only in the intertitles – recognizable as having been restored by the use of a modern typeface or the lack of decorative frames with the production company's logo. It is true that a simple inspection of the copy on a flatbed-editing table will reveal that the film stock is modern, but a work of restoration that tries to simulate the 'aspect' of the 'original' by adapting modern technical means (e.g. de Oliveira's work), will remain obscure to most audiences. This issue is exacerbated by the lack of a shared protocol for detailed documentation of restorers' decisions, and by the secretive attitude of many private commercial laboratories, entrusted by film archives with preservation/restoration work, whose professionals are anything but enthusiastic to share their know-how with others.

In brief, a comparison between art and film restoration shows that the predominant attitude in the latter is more aesthetic and target-oriented, whilst in the former it is more conservative and source-oriented. It must be added that between the museological ('showing') and the archival ('preserving') purposes, film archivists are increasingly adopting a compromise solution, which mediates between the needs of scholars and broader audiences. Thus, in the relatively small film festivals or in special events in which it is possible to watch silent films on cinema screens, restorers are now trying to respect the films' original 'defects' (e.g. scratches from the negative emulsion, original sound frequencies). This perspective is important because it produces the parallel outcome of educating those who watch silent films to a more 'authentic' cinematic experience. This educational aim, however, inevitably conflicts with those tendencies in the film industry, driven by marketing interests, that continue to propose an idea of restored film as a brand new, glossy product.

The fact that the museological aim of presentation tends to play a stronger role in film restoration than in art restoration may be because films are assumed to be reproducible industrial objects, in which 'the material contributes to the image but is not an integral and irreplaceable part of it'.[96] In this perspective, restorers must take up the challenge of 'translating' the silent film into a form that can be appreciated by modern audiences. A silent film, though, represents a particular case within film restoration, because while it may have begun life as a reproducible object, it will most certainly have since become almost unique, both because films were often shot in various different versions, rather than simply copied, and because many of the copies that did exist have been lost. It is also true that many films were made as products of popular entertainment and not designed to be durable.

However, the very nature of silent films, which seem to move away from the

[96] Giusti, p. 146.

allographic sphere, approaching the condition of autographic works of art – unique objects – led me to put forward, in 4.1, a definition of a restored silent film in a semiotic perspective. In terms of Eco's taxonomy of copies, I suggested that the restoration of a silent film by means of modern technology, which produces a 'simulation' of an original coloured print, fits his category of 'moderate forgery'. In fact, what restorers produce for public screenings are works that imply a flexible approach to the question of authenticity, given that a modern print is being presented in these screenings as effectively interchangeable with a silent film, in spite of those special characteristics that make the latter similar to an autographic work of art. One issue that may be worth discussing, then, is how restorers might make the public aware of the distance between the original text and context on the one hand and the modern viewing experience on the other. Without an awareness of this distance, what is screened might be mistaken for perfect double of an 'original' that perhaps never existed. What is important is that the restored copy should be understood to be a sort of 'new original', both from an aesthetic and an historical point of view, a further stage in the history of the reception of the work.

In this respect, as I went on to argue in 4.2, textual criticism, well rooted in widely recognized principles, has provided a valid frame of reference with which to help delimit a theoretical field specific to film restoration. Textual bibliography in particular, dealing with texts created after the invention of the printing press (and therefore similar to films in their 'technical reproducibility'), can offer a productive set of parallels between the work of philologists and that of film restorers. The two main philological schools of thought represent two different approaches to the text. One aims at reconstructing an archetype, the other at recognizing the whole history of the transmission of a text. The first approach, which Canosa calls 'static', leads one to consider the text as something fixed. The second – the 'dynamic' approach – puts more

emphasis on the different versions of the same work. If one accepts Cherchi Usai's 'rule' that a silent film is 'a multiple object fragmented into a number of different entities equal to the number of surviving copies', then the 'dynamic' kind of textual criticism has proved to be closer to the task of film restorers, who deal with 'the impossibility of an interpenetration of the different versions' when grappling with the problem of narrative lacunae (see, for example, the case of *Rescued by Rover* discussed in 1.3).[97]

The philosophical frame provided by Carboni in his parallel between Brandi's theory and Gadamer's thought (see 4.2) prompted me to think of film restoration as a hermeneutic activity, an art of interpretation. Brandi's and Gadamer's speculations on time appear to converge towards the concept of historicity. Brandi defines the three moments of the lifetime of a work of art, stating that 'for restoration to be a legitimate operation, it cannot presume that time is reversible or that history can be abolished.'[98] Gadamer emphasizes that 'temporal distance is not something that must be overcome.'[99] It is precisely this temporal distance that allows one to get in contact with the past and to acquire knowledge.

Gadamer's idea of a 'fusion of horizons', within this experience of understanding, points to the tension between the text and the present. One might see film restorers as negotiators or go-betweens, trying to mediate between the past world of the works and the present of the audience. They do not merely reproduce the material object, nor the performance of the past time, but put the cultural horizon of the past in contact with the present. In addition, Brandi's metaphor of a restorer as a judge, who applies the law to different specific cases, is more than just an interesting analogy. It is an accurate representation of the restorer's work: taking decisions is in fact one of its

[97] Cerchi Usai, *Silent Cinema*, p. 160; Mazzanti, p. 29.
[98] Brandi, *Theory of Restoration*, p. 64.
[99] Gadamer, p. 297.

most crucial acts, but it must acknowledge first and foremost not only the text but also its cultural, historical context. Thus, both authors seem to me to concur in shifting the attention of restorers from technical concerns to the positive acceptance of an irremediable distance between themselves and the film to be restored, and the attempt to build a practical hermeneutics.

The fieldwork I conducted in film restoration laboratories – though limited to Italy and the United Kingdom – led to the publication of an article, as well as to my collaboration as technical assistant to João de Oliveira, yet this experience was not sufficient to answer my central research question about the nature of film restoration.[100] I therefore attempted to refine the theoretical framework, investigating the methods and choices behind the day-to-day film restorers' decisions.

Inevitably, however, the emphasis that I placed on the philosophical aspect of the research meant that other aspects, also deserving of study, were left out. One of these is the financial aspect of film restorations. Money, as in many other aspects of life, appears to be a sort of taboo in art restoration, something which it is not polite to discuss. However, it would be interesting to investigate the film restoration market, to understand better the choices available to film archives and their relations with restoration laboratories in an era of fast development of digital technology. In this era of rapid change from analogue to digital technology, scholars might want to deal with the task of carefully monitoring this epochal passage, opening up future research projects.

On this path it could be also interesting to explore the changes in the reception of silent films by audiences increasingly accustomed to digital products, and the postmodern idea of an endless, perfect reproduction. In addition, I believe that a thorough investigation of film restoration in Eastern archives, where climate can be a problematic issue, could provide insight into different ways of conceiving film

[100] Pescetelli, 'Scritto sull'acqua: riflessioni teoriche sul restauro dei film'; see de Oliveira, 'Cabiria, una nuova sfida per il restauro', (note 3, p. 61).

restoration.

With this thesis I hope to have contributed to the advancement of theoretical research in silent films restoration, broadening the field to a more solid philosophical approach to the discipline. This research has made clear that restorers' efforts to provide an authoritative version, as well as to make films from the past 'viewable', especially silent films, cannot be limited to the 'reconstruction' of the film only. The role of restorers implies taking into account not only the material nature of films as artefacts, but also the historical/cultural context in which they were conceived. In the attempt to fulfil this task, restorers are in a privileged position to be the first spectators of a film, and, at the same time, mediators between films and the public.

To conclude with another textual parallel, as Nadia Fusini argues in relation to the complex hermeneutics issues tied to the 'authenticity' of Shakespeare's corpus, in a sense 'the true exegetes, the true hermeneutic interpreters are the copyists, scribes, and editors who have been able to bring to full term what were often unformed foetuses, allowing them to develop into harmonious beings. In this process of textual engineering […] an interpretative structure has been inscribed at the same time.'[101]

In this sense, it is possible to define film restoration as the 'art of not forgetting'.[102] It is, perhaps, a very human wish to reverse time and overcome the law of impermanence that lies behind the restorer's dialogue with the past: a wish to enable cultural objects to live in an eternal present, which contemporary restoration theory denies, but which it must at least entertain as a theoretical possibility.

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[101] Nadia Fusini, *Di vita si muore. Lo spettacolo delle passioni nel teatro di Shakespeare* (Milan: Mondadori, 2010), p. 12.

[102] I was inspired in my title by the different perspective taken by the book *The Art of Forgetting*, ed. by Adrian Forty and Susanne Küchler (Oxford: Berg, 1999) in which 'the relationship between material objects and collective forgetting' (p. 2) is investigated.

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